

2018 ACM RICHARD TAPIA

CELEBRATION OF DIVERSITY IN COMPUTING CONFERENCE

DIVERSITY: ROOTS OF INNOVATION



PRESENTED BY CMD-IT

SEPTEMBER 19-22, 2018 | ORLANDO, FL

TABLE OF CONTENTS

ACM Richard Tapia Celebration of Diversity in Computing	1
Center for Minorities and People with Disabilities in Information Technology	2
2018 Tapia Conference Welcome	3
Featured Speakers	4
Meet Dr. Richard Tapia	5
2018 Richard Tapia Achievement Award	6
Schedule at a Glance	7
Daily Schedules	
Wednesday, September 19, 2018	12
Thursday, September 20, 2018	15
Friday, September 21, 2018	27
Saturday, September 22, 2018	35
Conference Organization	36
Tapia 2018 Conference Committees	37
Tapia 2018 Sponsors	39
Tapia 2018 Exhibitors	44
Exhibit Hall Map	45
Site Map	46



2018 ACM RICHARD TAPIA

CELEBRATION OF DIVERSITY IN COMPUTING CONFERENCE

SEPTEMBER 19–22, 2018 | ORLANDO, FL

The **2018 ACM Richard Tapia Celebration of Diversity in Computing Conference** is sponsored by the Association for Computing Machinery (ACM) and presented by the Center for Minorities and People with Disabilities in Information Technology (CMD-IT).

This year's conference, the twelfth meeting in the conference series that began in 2001, celebrates the technical contributions and career interests of diverse people in computing fields. Additionally, the conference strives to help all attendees—especially students—build vital connections that will serve them well both professionally and personally. The conference aims to provide an educational and supportive networking environment for underrepresented groups across the broad range of computing and information technology, from science to business to the arts to infrastructure.

Diversity: Roots of Innovation. The 2018 Tapia conference theme reminds us to celebrate the historical role of diversity with respect to STEM innovation, and declare it as a standard essential set of roots for computing innovation in the future. Conquering computing challenges going forward—while ensuring benefits across all global citizens—whether it is artificial intelligence, blockchain, cybersecurity, or a range of other subjects, requires the resources, talent, and experiences from a diverse collective. Just as we have embraced risk-taking, perseverance, and creativity as cornerstones of innovation, organizations and society must treat diversity with the same reverence. This should be reflected in leadership, strategies, and policies charging forward.

TAPIA

CENTER FOR MINORITIES AND PEOPLE WITH DISABILITIES IN INFORMATION TECHNOLOGY (CMD-IT)

The Center for Minorities and People with Disabilities in Information Technology (CMD-IT) is a non-profit organization with a vision to contribute to the national need for an effective workforce in computing and IT through synergistic activities related to minorities and people with disabilities. The vision is realized through the mission to ensure that under-represented groups are fully engaged in computing and information technologies, and to promote innovation that enriches, enhances, and enables these communities, such that more equitable and sustainable contributions are possible by all communities. CMD-IT is the presenter of the ACM Richard Tapia Celebration of Diversity in Computing and the organizer of the following programs:



FLIP Alliance

The goal of the NSF-funded FLIP (Diversifying Future Leadership in the Professoriate) Alliance is to address the broadening participation challenge of increasing the diversity of the future leadership in the professoriate in computing at research universities as a way to achieve diversity across the field. The FLIP Alliance brings together the departments responsible for producing the majority of the professoriate with individuals and organizations that understand how to recruit, retain, and develop students from underrepresented groups in order to create a network that can quickly and radically change the demographic diversity of the professoriate across the field of computing.

University Award

The annual University Award recognizes US institutions that have demonstrated a strong commitment to increasing the computer science baccalaureate degree production of minorities and students with disabilities, through effective retention programs. The award is sponsored by Microsoft.

Academic Careers Workshops

The goal of the annual workshop is to mentor under-represented assistant- and associate-level faculty and senior doctoral students about the academic career ladder. The workshop includes panels of diverse senior faculty talking about the tenure and promotion process, launching a research program, professionalism, and a detailed session on proposal writing. In addition, the workshop includes a discussion about alternative career paths. The workshops are funded by NSF.

Student Professional Development Workshops

The annual workshop provides undergraduate and masters level computer science students with the unique opportunity to receive coaching and development from Industry professionals about the job application and interview processes. The workshops are held at the Tapia Conference.

Industry Professional Development Workshops

The annual workshop provides industry professionals with the opportunity to learn key skills and strategies necessary for successfully navigating the industry career ladder. The workshops are interactive sessions led by a professional facilitator and held at the Tapia Conference.

WELCOME

FROM THE GENERAL CHAIR AND PROGRAM CHAIR



From the 2001 inaugural edition of the **Richard Tapia Celebration of Diversity in Computing** in Houston, Texas, the “Tapia” conference has been the premier conference venue to celebrate the innovation, creativity and richness that abound when we engender participation from broad and diverse communities in computing-related fields. Thankfully, the conference continues to thrive: the technical, professional and civic offerings have grown; the number of attendees has grown; and most importantly, the impact the conference has on all fields of computing has grown! Aiming to preserve these important legacies, with the deepest senses of honor, obligation, commitment and passion, we present to you the 12th Tapia conference, Tapia 2018.

Our theme for Tapia 2018 is **“Diversity: Roots of Innovation.”** This year’s conference evokes the basic yet irrefutable concept that diversity is a standard essential set of roots for computing innovation in the future. Conquering computing challenges going forward—while ensuring benefits across all global citizens—whether it is artificial intelligence, blockchain, cybersecurity, or a range of other subjects, requires the resources, talent, and experiences from a diverse collective. Just as we have embraced risk-taking, perseverance, and creativity as cornerstones of innovation, organizations and society must treat diversity with the same reverence. This should be reflected in leadership, strategies, and policies charging forward.

Each year the number of submissions to the conference has grown, and Tapia 2018 is no different. Thanks to record setting numbers of submissions, we hope you find this year’s offerings as exciting, educational, inspiring and diverse, as ever. We received a total of 81 Birds-of-a-Feather (BoFs), Workshop and Panel submissions. With the help of our Technical Program Chairs and committee members, we selected 20 BoFs, 14 Workshops and 15 Panels. Our popular Poster Reception will showcase 31 student posters (selected from 79 submissions). For the second time, alongside our poster program, Tapia hosts an ACM Student Research Competition (SRC), sponsored by Microsoft Research; 21 of the 31 student posters are participating in this ACM SRC. Our distinguished and inspirational lineup of plenary and banquet speakers remind us that it is important to pay attention to the role models amongst us and those that have come before us. Finally, we complement these program activities with a series of professional and development panels, and the Saturday Doctoral Consortium.

Tapia 2018 is only made possible through the commitment, hard work and financial support of a diverse set of people and organizations. We are deeply grateful to the Tapia 2018 Infrastructure and Technical Program Committees: these task forces that comprise volunteers from academia, research labs and industry form the heart and soul of the conference. We wish to acknowledge all sponsors of Tapia 2018, especially our Platinum Sponsors and Gold Sponsors. In part, this sponsorship supported the attendance of over 200 scholarship recipients and 8 Doctoral Consortium participants.

We close this welcome address with a few sincere wishes. We wish that the Tapia 2018 program exceeds all of your expectations. We wish that your Tapia 2018 experience provokes and stimulates new ideas that positively impact your professional and personal lives. We hope that you strengthen and form new connections with peers, mentors, and protégés, connections that will help you establish a powerful “diverse” networks and broaden your approach to viewing and solving computing and societal challenges. Lastly, we wish that each and every one of you realize your dreams and aspirations and help to render a brilliant, inventive, diverse new world of computing. Happy Computing!



Tao Xie
*Tapia 2018
General Chair,
Professor
and Willett
Faculty Scholar,
Department
of Computer
Science, University
of Illinois Urbana-
Champaign*



Joel Branch
*Tapia 2018 Program
Chair, Director
of Platform
Development and
AI Architect, Lucid,
Inc.*

Tao Xie
*Tapia 2018 General Chair, Professor and
Willett Faculty Scholar, Department of
Computer Science, University of Illinois
Urbana-Champaign*

Joel Branch
*Tapia 2018 Program Chair
Director of Platform Development and AI
Architect, Lucid, Inc.*

FEATURED SPEAKERS

FIRESIDE CHAT PLENARY PANELISTS



Seraphin B. Calo
Principal Research
Staff Member,
IBM Research



Ayanna Howard
Linda J. and
Mark C. Smith
Professor and
Chair of the School
of Interactive
Computing,
Georgia Institute of
Technology



Jeff Ramos
General Manager,
The Microsoft
Garage



**Hakim
Weatherspoon**
Associate Professor,
Cornell University



Valerie Taylor
Moderator
President & CEO,
CMD-IT; Director
of the Mathematics
and Computer
Science Division,
Argonne National
Laboratory

PLENARY KEYNOTE SPEAKERS



Shiri Azenkot
Assistant Professor
of Information
Science, Jacobs
Technion-Cornell
Institute at Cornell
Tech, Cornell
University



Ronald Perez
Intel Fellow &
Technical Lead,
Data Center Group
at Intel Corporation



Moshe Y. Vardi
George Distinguished
Service Professor
in Computational
Engineering &
Director, Ken
Kennedy Institute
for Information
Technology at Rice
University

BANQUET KEYNOTE SPEAKER



Shirley Malcom
Head of Education
and Human
Resources Program
at AAAS

MEET DR. RICHARD TAPIA

Richard Tapia is a mathematician and professor in the Department of Computational and Applied Mathematics at Rice University in Houston, Texas. He is internationally known for his research in the computational and mathematical sciences and is a national leader in education and outreach.

Tapia's current Rice positions are University Professor (only the sixth individual afforded this title in the 100-year history of Rice University), Maxfield-Oshman Professor in Engineering, Director of the Center for Excellence and Equity in Education.

Tapia was born in Los Angeles to parents who separately emigrated from Mexico as young teenagers in search of educational opportunities for themselves and for future generations. The first in his family to attend college, Tapia went on to receive B.A., M.A. and Ph.D. degrees in mathematics from the University of California, Los Angeles. In 1967 he joined the Department of Mathematics at UCLA and then spent two years on the faculty at the University of Wisconsin. In 1970 he moved to Rice University where he was promoted to associate professor in 1972 and full professor in 1976. He chaired the department from 1978-1983. He is currently an adjunct faculty member of both Baylor College of Medicine and the University of Houston. Tapia has authored or co-authored two books and more than 100 mathematical research papers.

Among his many honors, Tapia was the first Hispanic elected to the National Academy of Engineering. In 1996 President Clinton appointed him to the National Science Board, where he served until 2002, and from 2001 to 2004 he chaired the National Research Council's Board on Higher Education and the Workforce. He has received the National Science Foundation's inaugural Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring; the Lifetime Mentor Award from the American Association for the Advancement of Science; the Distinguished Service to the Profession Award from the



Society for Industrial and Applied Mathematics; the Distinguished Public Service Award from the American Mathematical Society; the Distinguished Scientist Award from the Society for the Advancement of Chicanos and Native Americans in Science in addition to seven honorary doctorates. He was also the first recipient of the Computing Research Association's A. Nico Habermann Award for outstanding contribution to aiding members of underrepresented groups within the computing research community; named one of 20 most influential leaders in minority math education by the National Research Council; listed as one of the 100 most influential Hispanics in the U.S. by Hispanic Business magazine; and given the "Professor of the Year" award by the Association of Hispanic School Administrators, Houston Independent School District, Houston, TX. In 2005, Tapia was recently honored with the 2017 American Association for the Advancement of

Science's Public Engagement with Science Award for his remarkable career blending world-class scholarship, admirable mentoring and profound contributions to science, technology, engineering and mathematics education and public engagement. In 2014 Tapia was awarded the National Science Board's Vannevar Bush award for his extraordinary leadership, inspiration, and advocacy to increase opportunities for underrepresented minorities in science, distinguished public service leadership in science and engineering, and exceptional contributions to mathematics in the area of computational optimization. The National Medal of Science is the highest award given to a scientist or engineer by the United States government.

In 2011, President Barack Obama presented the National Medal of Science to Tapia for his pioneering and fundamental contributions in optimization theory and numerical analysis and for his dedication and sustained efforts in fostering diversity and excellence in mathematics and science education.

While at Rice, Tapia has directed or co-directed more underrepresented minority and women doctoral recipients in science and engineering than anyone in the country, and has led several programs that have brought recognition to the university's commitment to diversity. Tapia recently established the Rice Summer Tapia Camps for high school students and teachers that offer campers an opportunity to work alongside STEM students, interact with renowned scientists, and participate in project based collaborative learning activities.

Two professional conferences have been named in Tapia's honor, recognizing his contributions to diversity: Richard Tapia Celebration of Diversity in Computing conference and the Blackwell-Tapia Conference, whose founders described Tapia as a seminal figure who inspired a generation of African-American, Native American and Latino/Latina students to pursue careers in mathematics.

TAPIA ACHIEVEMENT AWARD

RICHARD A. TAPIA ACHIEVEMENT AWARD FOR SCIENTIFIC SCHOLARSHIP, CIVIC SCIENCE AND DIVERSIFYING COMPUTING

Ayanna Howard's career has focused on creating intelligent technologies that must adapt to and function within a human-centered world and her passion has been on diversifying computer science by engaging girls, underrepresented minorities and people with disabilities using innovative technologies.

Ayanna Howard is the Linda J. and Mark C. Smith Professor and Chair of the School of Interactive Computing in the College of Computing at the Georgia Institute of Technology. She also holds a faculty appointment in the School of Electrical and Computer Engineering. Prior to Georgia Tech, Dr. Howard was a senior robotics researcher at NASA's Jet Propulsion Laboratory. She has also served as the Associate Director of Research for the Institute for Robotics and Intelligent Machines, Chair of the Robotics Ph.D. program, and the Associate Chair for Faculty Development in the School of Electrical and Computer Engineering at Georgia Tech.



Her work, which encompasses advancements in artificial intelligence (AI), assistive technologies, and robotics, has resulted in over 250 peer-reviewed publications in a number of projects — from healthcare robots in the home to AI-powered STEM apps for children with diverse learning needs. At NASA, she developed software that could enable future Mars probes the ability to choose their landing sites and future rovers the ability to navigate the Martian surface by mimicking the way a human might handle the job. She has also developed and had acquired a number of innovations including Brainsheet, a neural-network optimization package, and TabAccess, a wireless controller for individuals with motor impairments.

Her unique accomplishments have been highlighted through a number of articles, including highlights in *USA Today*, *Upscale*, *Atlanta Magazine's Women Making a Mark* and *TIME Magazine*, as well as being recognized as one of the 23 most powerful women engineers in the world by *Business Insider*. She has received numerous awards including the MIT Technology Review Top Young Innovator, NSBE Janice Lumpkin Educator of the Year

Award, AAAS-Lemelson Invention Ambassador, and the Computer Research Association's A. Nico Habermann Award

Ayanna Howard's work in diversifying computing began as an undergraduate, where she would tutor young students and be a big sister/mentor at low income area high schools. She continued this work at NASA, creating a program to bring middle school girls into STEM by having technical women put on workshops focused on robotics and STEM and launching

a program to encourage undergraduates to go onto graduate school. At Georgia Tech she worked to launch a number of coding and robotics outreach camps. It was at one of these camps that she met a camper with visual impairment which led her to expand her view of diversity.

In 2013, she founded Zyrobotics, a technology company which focuses on creating educational software which is fully accessible to children no matter what their level of abilities. Zyrobotics is currently licensing technology derived from her research and has released their first suite of STEM educational products to engage children of all abilities.

Dr. Howard received her B.S. in Engineering from Brown University, and her M.S. and Ph.D. in Electrical Engineering from the University of Southern California.

Ayanna Howard's favorite quote is "You know sometimes all you need is 20 seconds of insane courage. Just literally 20 seconds of just embarrassing bravery. And I promise you something great will come of it." Benjamin Mee, *We Bought a Zoo*. Ayanna Howard's advice "It is important to remember that everyone struggles, everyone has times when they feel they don't belong. Be confident in your own abilities and ignore the naysayers. Just bulldoze through it."

WEDNESDAY

SEPT. 19, 2018

10:00 AM - 9:30 PM

Nursing Mothers Room

Location: Discovery 48

10:00 AM - 9:00 PM

Conference Registration

Location: Regency Ballroom Foyer

12:00 PM - 6:00 PM

Exhibitor Set-Up

Location: Regency Ballroom Foyer

1:00 PM - 5:00 PM

CMD-IT Student Professional Development Workshop

Pre-registration required

Location: Orlando L-M

CMD-IT Professional Development Workshop: Crucial and Courageous Conversations

Professional attendees only

Pre-registration required

Location: Florida C

Doctoral Consortium

By invitation only

Location: Challenger 38-39

5:00 PM - 6:00 PM

Scholarship Recipient Orientation & Newcomers Session

Location: Florida A-B

6:00 PM - 7:30 PM

Welcome Reception & Fireside Chat: Writing the Hitchhiker's Guide to Autonomous Systems

Location: Regency Foyer & Regency O-R

Seraphin B. Calo

Principal Research Staff Member, IBM Research

Ayanna Howard

Linda J. and Mark C. Smith Professor and Chair of the School of Interactive Computing, Georgia Institute of Technology

Jeff Ramos

General Manager, The Garage

Hakim Weatherspoon

Associate Professor, Cornell University

Valerie Taylor

Moderator

President & CEO, CMD-IT; Director of the Mathematics and Computer Science Division, Argonne National LaboratoryModerator

7:30 PM - 9:30 PM

Dessert & Career Fair

Location: Plaza International Ballroom

Wed

THURSDAY

SEPT. 20, 2018

8:00 AM - 6:00 PM

Conference Registration

Location: Regency Ballroom Foyer

8:00 AM - 9:30 PM

Nursing Mothers Room

Location: Discovery 48

8:00 AM - 9:00 AM

General Breakfast

Location: Regency Foyer & Regency O-R

Flip Alliance Fellows and Faculty Breakfast

By Invitation Only

Location: Barrell Springs

9:00 AM - 9:30 AM

Welcome & Announcements

Location: Regency O-R

9:30 AM - 11:00 AM

Plenary Speakers

Location: Regency O-R

Changing the Way We See Things: Designing Technology for People with Low Vision

Shiri Azenkot, Assistant Professor of Information Science, Jacobs Technion-Cornell Institute at Cornell Tech, Cornell University

Confidential Computing: Beyond Protection of Data at Rest and Data in Motion

Ronald Perez, Intel Fellow & Technical Lead, Data Center Group at Intel Corporation

Location: Regency O-R

11:00 AM - 6:00 PM

Exhibits

Exhibit Hall Open

Location: Plaza International Ballroom

11:00 AM - 12:30 PM

Private Poster Presenter Luncheon

Location: Barrell Spring

Panels & Workshops

Faculty Workshop Part I - NSF Funding Opportunities

Location: Manatee Spring

Data Science for Internet of Things Case Study: Smart Home Devices

Location: Orlando L

Write Your First Ethereum Smart Contract in Solidity

Location: Florida A

Level Up! Boosting Your Career XP

Location: Florida B

What Would You Say if... Responding to Microaggressions, Bias, and Other Nonsense

Location: Orlando M

High Performance Computer Networking: Moving Data Fast, Easily, and Securely: Part I

Location: Discovery 44

Google SRE Classroom, or An Introduction to the Profession of Site Reliability Engineering; and How To Build a Reliable Distributed System

Location: Florida C

Women of Color in Computing: Addressing the Double-Bind Through A Researcher-Practitioner Collaborative

Location: Orlando N

12:30 PM - 2:00 PM

Tapia Student Poster Competition/ACM Student Research Competition (SRC) & Lunch

Location: Regency Foyer & Regency O-R

2:00 PM - 3:30 PM

Panels & Workshops

Disability Disclosure in Education and Employment

Location: Orlando M

Increasing Diversity in Computing: Sharing of Good Practices

Location: Orlando N

Free Social Media and the implications of Attention Harvesting

Location: Orlando L

All You Wanted To Know About Publishing Research But Were Afraid To Ask

Location: Florida B

Taking on the Technical Interview

Location: Florida C

Research and Business Opportunities in Distributed Ledger and Blockchain Technology

Location: Manatee Spring

3:30 PM - 4:00 PM

Refreshment Break

Location: Plaza International Ballroom Foyer

4:00 PM - 5:00 PM

Tech Talks & Birds of a Feather Sessions

Tech Talks

Sponsored by Two Sigma

Lessons from Industrial Manufacturing

Human Skill in Machine Learning

Location: Orlando N

Disability: Celebrating a Face of Diversity

Location: Orlando M

Visualization Research and Careers

Location: Orlando L

Giving Back While Moving Forward: Sharing Strategies for Integrating Research and Action for Equity and Inclusion into Your Computing Career

Location: Florida A

Black Engineering and Computing Doctoral Students Peer Interactions that Foster Racial Isolation

Location: Florida B

Supporting Hispanics and Latinx in Computer Science

Location: Florida C

5:00 PM - 6:00 PM

Tech Talks & Birds of a Feather Sessions

Tech Talks

Sponsored by Fidelity Investments & Wayfair

Inclusion from the Inside Out: Why Building Diverse Teams Starts From the Top

Machine Learning Techniques to Power Dynamic Pricing

Location: Orlando N

Life as a Liberal Arts College CS Professor

Location: Orlando M

Multiple Perspectives on Introducing Data Analytics

Location: Orlando L

Addressing Impostor Syndrome

Location: Florida A

Defining your Own Success: Self-Care & Achievements as a Minority in a Majority Workplace

Location: Florida B

Hispanics in Computing

Location: Florida C

6:00 PM – 7:30 PM

Hispanics in Computing Reception

Sponsored by The Aerospace Corporation

Location: Florida C

7:00 PM - 8:30 PM

AnitaB.org Community Meetup

Sponsored by AnitaB.org

Location: Barrell Spring

Thu

FRIDAY

SEPT. 21, 2018

8:00 AM - 11:00 PM**Nursing Mothers Room**

Location: Discovery 48

8:00 AM - 5:00 PM**Conference Registration**

Location: Regency Ballroom Foyer

8:00 AM - 9:00 AM**General Breakfast**

Location: Regency Foyer & Regency O-R

CMD-IT Advisory Board Breakfast*By invitation only*

Location: Discovery 46

9:00 AM - 9:30 AM**Announcements**

Location: Regency O-R

9:30 AM - 10:30 AM**Ken Kennedy Distinguished Lecture****Humans, Machines, and Work: The Future is Now**

Moshe Y. Vardi, George Distinguished Service Professor in Computational Engineering & Director, Ken Kennedy Institute for Information Technology at Rice University

Location: Regency O-R

10:30 AM - 5:00 PM**Exhibit Hall Open for Graduate Application Review Clinics and Interviews with Sponsors**

Location: Plaza International Ballroom

10:30 AM - 12:00 PM**SRC Competition Round II**

Location: Florida B

Panels & Workshops**High Performance Computer Networking: Moving Data Fast, Easily, and Securely: Part II**

Location: Discovery 44

Roots of Innovation are Interdisciplinary

Location: Orlando M

Untold Stories of Black Women PhDs in Computing

Location: Orlando N

Welcoming Students with Disabilities

Location: Orlando L

Cybersecurity 101 for Critical Infrastructures: A Hands-on Approach

Location: Florida A

Moving From Black Boxes to Explainable Artificial Intelligence

Location: Florida C

Dealing with Bias and Unfairness in Machine Learning Algorithms

Location: Discovery 45

12:00 PM - 1:30 PM**General Lunch & Networking**

Location: Regency Foyer & Regency O-R

Faculty Luncheon*By invitation only*

Location: Barrell Spring

Autodesk Student Luncheon**Humans, AI, and Diversity - Transforming the Customer Experience with AI***Sponsored by Autodesk**Pre-registration Required*

Location: Rainbow Spring

1:30 PM - 3:00 PM**Panels & Workshops****Faculty Workshop Part II - Effective Student Retention Strategies**

Location: Manatee Spring

Five Days that Transformed My Teaching

Location: Orlando N

Things I Wish I'd Known

Location: Orlando L

Mixing Real and Virtual in WebXR: Augmented and Mixed Reality for Everyone

Location: Florida A

Building Your Resume for a Tech Career by Google and Pandora

Location: Florida B

iAAMCS Guidelines for Successfully Mentoring Black/African-American Computing Sciences Ph.D. Students

Location: Florida C

3:00 PM - 3:30 PM**Refreshment Break**

Location: Plaza International Ballroom Foyer

3:30 PM - 4:30 PM**Tech Talks & Birds of a Feather Sessions***Sponsored by MIT Lincoln Labs and SAP***Software Reverse Engineering with Panda****The Inclusive Perspective and Purpose-driven Technologies: Making the World Run Better**

Location: Orlando N

SATURDAY

SEPT. 22, 2018

Learn About Open Source Software

Location: Orlando L

The Forgotten: Why Technology Education, Engagement, and Access for Girls in Rural Communities is Crucial for the Future

Location: Florida A

Computing and Values

Location: Florida B

Radical Transparency: Centering Social Justice in Computer Science for All

Location: Barrell Spring

4:30 PM - 5:30 PM

Tech Talks & Birds of a Feather Sessions

Sponsored by Microsoft

Xbox Avatars: The Art of Expressing Yourself with Technology

Location: Orlando N

The Ethics of Cyber Dating

Location: Orlando M

What is a Computer Science Student Advisory Council and Why is it Needed

Location Orlando L

Social Responsibility and Ethics in Artificial Intelligence and Extended Reality

Location: Florida A

Open Source: How to Earn Money or Build a Portfolio from Home!

Location: Florida B

Embracing Diversity in Experiences

Location: Florida C

Community Engagement and Service Learning in Computer Science Education

Location: Manatee Spring

5:00 PM - 6:00 PM

VIP Reception

By invitation only

Location: Orchid

6:00 PM - 11:00 PM

Banquet & Dancing

Keynote Speaker

Shirley Malcom, Head of Education and Human Resources Programs at AAAS

Location: Regency O-R

POST CONFERENCE ACTIVITIES

8:00 AM - 12:00 PM

Flip Alliance Meeting

By Invitation Only

Location: Orlando N

8:30 AM - 4:30 PM

BWiC Pathways to STEM Gaming Workshop for High School Students

Sponsored by Black Women in Computing (BWIC), CMD-IT, Microsoft, StrongTIES and Florida Interactive Entertainment Academy

Location: Florida Interactive Entertainment Academy

STARS Celebration

Pre-Registration Required

Location: Plaza F

Sat



1:00 PM - 5:00 PM

CMD-IT Student Professional Development Workshop

Sponsored by Microsoft, LinkedIn and Autodesk

Pre-registration required

Location: Orlando L-M

The CMD-IT Student Professional Development Workshop will provide undergraduate and masters level computer science students with the unique opportunity to receive coaching and development from Industry professionals. Students will learn the best practices for resume writing, preparing for the rigors of the (technical/behavioral) interview process and social media presence. The workshop includes a Resume Clinic where students can get 1:1 advice from professional industry volunteers on their resumes.

CMD-IT Professional Development Workshop: Crucial and Courageous Conversations: How to Handle Difficult Conversations in the Workplace and our Personal Lives:

Professional attendees only

Pre-registration required

Location: Florida C

A difficult conversation is anything you find it hard to talk about; and at some point in our personal lives and career, we will all have one. These types of conversations require courage because there is typically some level of risk involved. Whether the discussion is related to interpersonal conflict, performance or behavioral issues, asking for a raise; or simply having an unwanted conversation with your parents, sibling, or a friend; no matter how adept you might be as a communicator, difficult conversations can challenge even the most skilled.

How we go about handling these conversations and the courage to do so, can make all the difference, particularly when there is a power difference. According to extensive research by Carl Larsen, the primary predictor of the success of a work team is their ability to speak candidly with each other about difficult topics.

This means becoming more adept at addressing challenging situations, take courageous actions and have

difficult conversations is a key success factor and the focus of this workshop. In this workshop you will learn key skills and strategies that will enable you to have courageous conversations. You will learn to:

- Understand the three conversations taking place in a difficult conversation
- Decide when to raise an issue and when to let it go
- Determine what's really at stake in a difficult conversation
- Know how to manage your emotions in courageous conversations
- Discover besides fear, what holds us back from acting courageous and having difficult conversations
- Recognize the subtle social cues and often-invisible environmental factors that influence our ability to have courageous conversations

Workshop Facilitator: **Sabrina Coleman**, President and Founder, Mahoghany Coaching & Development

Doctoral Consortium

By invitation only

Location: Challenger 38-39

The Doctoral Consortium is a half day workshop that provides an opportunity for doctoral students to discuss and explore their research interests with a panel of established researchers in computing.

Doctoral students must have submitted an application during the Tapia 2018 Call for Participation to be selected for the Doctoral Consortium.

2018 Doctoral Consortium Research Topics

Epidemiological Disease Surveillance Using Public Media Text Mining

Andrea Villanes Arellano, North Carolina State University

Trust and Community Engagement in Digital Civics:

Exploring Opportunities for Design

Eric Corbett, Georgia Institute of Technology

Collaborative Video Game Design and Diversity

Rachel N. Simons, The University of Texas at Austin

Exploring Alternative Tools to Help Patients with Discordant Chronic Comorbidities (DCCs) Better Prioritize their Care and Treatment Plans and Communicate With Multiple Providers

Tom Ongwere, Indiana University-Bloomington



Makin' Math Move: A Full Body Interactive Learning Environment for Pre-Algebraic Practice

Tiffanie R. Smith, University of Florida

AAPi Identity Work on Reddit: Toward Social Support and Collective Action

Bryan Dosono, Syracuse University

Anomaly Detection in Real-World Temporal Networks

Pablo Moriano, Indiana University-Bloomington

5:00 PM - 6:00 PM

Scholarship Recipient Orientation & Newcomers Session

Location: Florida A-B

Tapia Conference Scholarship Recipients and attendees who are first time Tapia Conference participants are invited to join conference leadership at this session to welcome and introduce you to the conference.

6:00 PM - 7:30 PM

Welcome Reception & Fireside Chat: Writing the Hitchhiker's Guide to Autonomous Systems

Location: Regency Foyer & Regency O-R

Speakers: **Seraphin B. Calo**, Principal Research Staff Member, IBM Research

Ayanna Howard, Linda J. and Mark C. Smith Professor and Chair of the School of Interactive computing, Georgia Institute of Technology

Jeff Ramos, General Manager, The Garage

Hakim Weatherspoon, Associate Professor, Cornell University

Moderator: **Valerie Taylor**, President & CEO, CMD-IT; Director of the Mathematics and Computer Science Division, Argonne National Laboratory

The culmination of endless streams of data, algorithmic advances, intuitive programming frameworks, and AI processing power spread from mobile devices to the cloud are catapulting the proliferation of autonomous systems. Notable examples include autonomous vehicle ecosystems, smart cities, and cognitive financial services. The observed and foreseen benefits of autonomous systems include increased productivity and efficiency in the enterprise, and broader distribution of sophisticated services to a larger share of society (e.g., medical diagnoses, aide delivery). However, important concerns have arisen as well. For example, how are autonomous systems (especially AI) affecting employment and

occupational training? What are implications and expectations regarding personal privacy? What complications arise in auditing automated decisions and managing systems? Also, what further research, investments, and policies are needed to steer autonomous system development, deployment, and monitoring in effective responsible ways? The Fireside Chat will provide a stimulating forum for industry experts to provide insights on such topics.

BIOGRAPHIES:

Dr. Seraphin B. Calo is a Principal Research Staff Member at IBM Research and currently manages the Distributed AI Enablers group within that organization. He received the M.S., M.A., and Ph.D. degrees in electrical engineering from Princeton University, Princeton, New Jersey. He has worked, published, and managed research projects in several technical areas, including: queueing theory, data communications networks, multi-access protocols, expert systems, complex systems management, and hybrid networks. He has been very active in international conferences, particularly in the systems management and policy areas. Dr. Calo has authored more than ninety technical papers and has several United States patents (28 issued). He has received seven IBM Research Division awards, and thirteen IBM Invention Achievement awards. His current research interests include: distributed learning, multi-agent systems, policy based computing, and autonomous systems.

Ayanna Howard, Ph.D. is the Linda J. and Mark C. Smith Professor and Chair of the School of Interactive Computing in the College of Computing at the Georgia Institute of Technology. She also holds a faculty appointment in the School of Electrical and Computer Engineering. Dr. Howard's career focus is on intelligent technologies that must adapt to and function within a human-centered world. Her work, which encompasses advancements in artificial intelligence (AI), assistive technologies, and robotics, has resulted in over 200 peer-reviewed publications in a number of projects — from healthcare robots in the home to AI-powered STEM apps for children with diverse learning needs. Dr. Howard received her B.S. in Engineering from Brown University, and her M.S. and Ph.D. in Electrical Engineering from the University of Southern California. To date, her unique accomplishments have been highlighted through a number of awards and



articles, including highlights in *USA Today*, *Upscale*, and *TIME Magazine*, as well as being recognized as one of the 23 most powerful women engineers in the world by *Business Insider*. In 2013, she also founded Zyrobotics, which is currently licensing technology derived from her research and has released their first suite of STEM educational products to engage children of all abilities. Prior to Georgia Tech, Dr. Howard was a senior robotics researcher at NASA's Jet Propulsion Laboratory. She has also served as the Associate Director of Research for the Institute for Robotics and Intelligent Machines, Chair of the Robotics Ph.D. program, and the Associate Chair for Faculty Development in the School of Electrical and Computer Engineering at Georgia Tech.

As General Manager, **Jeff Ramos** is the business owner of The Microsoft Garage, a program aimed at driving innovation and experimentation. The Garage provides spaces for hacking and making for all employees and interns. The Garage is growing exponentially to support more employee innovation in more locations. New Garage facilities with expanded capabilities are now open at the Microsoft Global Development Centers in Redmond, WA., Vancouver, B.C., Silicon Valley, Beijing, China and Herzelia, Israel – and under construction in Cambridge, Massachusetts and Hyderabad, India. The Garage is responsible for Microsoft's flagship // oneweek Hackathon that attracts thousands of employees from around the world. The Garage is Microsoft's official outlet for experimental projects from product teams across the company to test a hypothesis and receive early customer feedback. The Garage also offers an intern opportunity to a small number of highly selective students to work in small teams, hack on contemporary technology, conduct customer research, design, and develop a product. Ramos has been with Microsoft since 1997 and has held several strategic roles in product development, marketing and business strategy. Ramos holds a bachelor of science degree in economics from St. Mary's College. Originally from the Bay Area, Ramos lives with his family in the Seattle area.

Hakim Weatherspoon is an Associate Professor in the Department of Computer Science at Cornell University. His research interests cover various aspects of fault-tolerance, reliability, security, and performance of internet-scale data systems such as cloud and distributed systems. Hakim earned his bachelor's degree in Computer Engineering with a minor in Mathematics from the University of Washington, where he also played in four consecutive bowl games as a Husky football player. He went on to earn his Ph.D. from the University of California, Berkeley, in the area of secure and fault-tolerant

distributed wide-area storage systems. His Ph.D. dissertation, *The Design and Evaluation of Distributed Wide-Area Online Archival Storage Systems*, focused on systems that could store global data durably, verifiably, and with minimal maintenance. He and Berkeley colleagues built Antiquity, part of the OceanStore project, to create a simple storage service and interface for applications that used a secure log maintained on multiple servers to ensure data integrity — work that is credited with helping to lay the foundation for modern cloud storage systems. Weatherspoon has earned a number of accolades for his many contributions, including an Alfred P. Sloan Research Fellowship; National Science Foundation CAREER Award; and a Kavli Fellowship from the National Academy of Sciences, and the University of Washington, Allen School of Computer Science and Engineering Alumni Achievement Award. He serves as Vice President of the USENIX Board of Directors and is the Founder and General Chair for the Association for Computing Machinery's 2017 SIGOPS/SIGMOD Symposium on Cloud Computing. Hakim has also been recognized for his work to promote diversity, earning Cornell's Zellman Warhaft Commitment to Diversity Award in 2014. Since 2011, he has organized the annual SoNIC Summer Research Workshop to help prepare between 15 to 25 students from underrepresented groups to pursue their Ph.D. in computer science.

Valerie Taylor is the Director of the Mathematics and Computer Science Division at Argonne National Laboratory. Prior to joining Argonne, she was the Senior Associate Dean of Academic Affairs in the College of Engineering and a Regents Professor and the Royce E. Wisenbaker Professor in the Department of Computer Science and Engineering at Texas A&M University. Prior to joining Texas A&M, Valerie Taylor was a member of the faculty in the EECs Department at Northwestern University. Her research is in the area of high performance computing, with a focus on performance analysis and modeling of parallel, scientific applications. She is also the CEO and President of the Center for Minorities and People with Disabilities in IT (CMD-IT). Valerie Taylor is an IEEE Fellow, ACM Fellow, and has received numerous awards for distinguished research and leadership including the Richard Tapia Award.

7:30 PM - 9:30 PM

Dessert & Career Fair

Location: Plaza International Ballroom

The Career Fair includes representatives from our supporters from industry, academia, government and non-profit organizations supporting individuals in computing.

THURSDAY PROGRAM SCHEDULE



8:00 AM - 9:00 AM

General Breakfast

Location: Regency Foyer & Regency O-R

FLIP Alliance Fellows and Faculty Breakfast

By Invitation Only

Location: Barrell Springs

9:00 AM - 9:30 AM

Welcome & Announcements

Location: Regency O-R

9:30 AM - 11:00 AM

Plenary Speakers

Location: Regency O-R

Changing the Way We See Things: Designing Technology for People with Low Vision

Shiri Azenkot, Assistant Professor of Information Science, Jacobs Technion-Cornell Institute at Cornell Tech, Cornell University

Millions of people in the US have difficulty seeing even with glasses or contact lenses. Many of these people have low vision, which means that while they have functional vision, they have a visual impairment that affects their ability to perform daily activities. The vast majority of people with visual impairments have low vision and aren't blind, but there has been very little research addressing this user group. In my talk, I'll describe low vision and present an overview of the research my group is conducting in this area. We are working on studying the challenges that low vision people face when completing daily activities such as shopping and navigation, and designing novel applications to address these challenges. Our approach is to leverage computer vision along with the user's residual vision to provide effective accessibility solutions.

BIOGRAPHY:

Shiri Azenkot is an Assistant Professor of Information Science at the Jacobs Technion-Cornell Institute at Cornell Tech, Cornell University. She directs the Enhancing Ability Lab, where she and her students research important accessibility problems, focusing on computer-vision-based technologies for people with visual impairments. Shiri frequently publishes at top HCI and accessibility conferences, including CHI, ASSETS, UIST, and UbiComp. Currently, her research is funded

by the NSF, AOL, Verizon, and Facebook. Before arriving at Cornell Tech, she was a PhD student in Computer Science & Engineering at the University of Washington, where she was advised by Richard Ladner and Jacob Wobbrock.

Confidential Computing: Beyond Protection of Data at Rest and Data in Motion

Ronald Perez, Intel Fellow & Technical Lead, Data Center Group at Intel Corporation

The confidentiality and integrity of data are cornerstone properties of information technology security. The use of cryptography in conjunction with more traditional access controls and other isolation mechanisms is now wide-spread, well understood, and accepted when protecting data at rest or in motion. For example, we use encrypted filesystems or self-encrypting storage devices when we save data on our computers, and we look for a lock symbol in our web browser address bar when we conduct business online because it signifies the use of Transport Layer Security (TLS), a secure communication protocol that relies heavily on cryptography.

As we rely more and more on computing environments that we may not directly control, there is heightened interest in the use of cryptography to protect data that is actively in use. Here too, cryptographic technologies have great promise and potentially huge implications for the outsourcing of private computation to environments such as those we see with various cloud computing models. For example, Fully Homomorphic Encryption (FHE) supports arbitrary computation on ciphertexts, or encrypted data. There have been significant advances in FHE since it was first proposed in the late 1970's. Unfortunately, implementations of FHE and other promising cryptographic technologies such as Secure Multi-Party Computation, may have a long way to go before they are practical for generic computation in common computing environments.

Trusted Executions Environments (TEEs) are hardware-based computing environments that combine cryptographic isolation of code and data in memory, along with more traditional isolation techniques, to provide strong confidentiality and integrity assurances. Intel Software Guard Extensions (SGX) is an example of such a TEE. We will examine SGX and other promising TEEs to better understand the assurances these

THURSDAY PROGRAM SCHEDULE

technologies provide, the capabilities they enable today, and the opportunities and challenges remaining as we seek stronger security assurances for our most common computing environments.

BIOGRAPHY:

Ronald (Ron) Perez is an Intel Fellow and the technical lead for security architecture pathfinding in the Data Center Group (DCG) at Intel Corporation. He is responsible for defining the strategic direction of platform security and architecture for DCG products. Perez collaborates with Intel's strategic planning organization and various business units across the Platform Engineering Group, Software and Services Group and Intel Labs to unify DCG security requirements and optimize the group's security technology roadmap.

An IT industry veteran and proven innovator, Perez joined Intel in 2017 with a breadth of experience spanning security, semiconductors and cloud computing. Most recently, he was a vice president in the Visa Research organization at Visa Inc. As head of security research, he led a team conducting fundamental and applied security and blockchain research critical to Visa and its business partners in the global digital commerce community. Before joining Visa in 2016, Perez spent two years as a fellow and chief technology officer in the cryptography research division of Rambus Inc. and five years as a senior fellow at Advanced Micro Devices Inc. (AMD), where he led the company's security architecture organization. Earlier in his career, Perez spent more than a dozen years as a senior manager and technical leader at IBM's T.J. Watson Research Center. During his tenure there, he led the systems solutions and architecture department, as well as multiple teams of research scientists and engineers pursuing advances in various systems technologies, including virtualization and systems management, next-generation memory subsystems, stream computing, multimedia and information theory. Perez began his career in 1984 as a software engineer at Motorola Inc. and Tandem Computers Inc.

Perez earned a bachelor's degree in computer science from the University of Texas at Austin. He has been granted more than two dozen patents related to various aspects of security, with additional patents pending. He is also the author or co-author of more than 20 publications on topics related to virtualization and security. His industry contributions include co-founding and representing AMD on the board of directors of the Cyber Security Research Alliance Inc. and representing IBM as vice president of the Trusted Computing Group.

11:00 AM - 6:00 PM

Career Fair and Exhibits

Location: Plaza International Ballroom

The Career Fair includes representatives from our supporters. Take an opportunity to discuss career and graduate school options with representatives from industry, academia, government and non-profits supporting individuals in computer science.

11:00 AM - 12:30 PM

Private Poster Presenter Luncheon

Location: Barrell Spring

Faculty Workshop Part I - NSF Funding Opportunities

Location: Manatee Spring

The first part of the Faculty Workshop will focus on various funding opportunities from the National Science Foundation. In particular, Fay Payton, program director in CNS at NSF will provide an overview of various funding opportunities and answer questions about effective strategies for writing NSF proposals.

Presenter: **Fay Payton**, NSF

Data Science for Internet of Things Case Study: Smart Home Devices

Location: Orlando L

Intelligent home devices are the hallmarks of the Internet of Things. Network traffic is an essential component of intelligent home devices communicates with the servers in the cloud. This workshop presents the data science of network analysis, including network patterns such dynamics over time, traffic similarity and communication among devices, network streams, and model forecasting. The participants will have the hands-on opportunity to learn and use RStudio to learn common data science algorithms in network analytics.

Presenter: **Olivera Kotevska**, National Institute of Standards and Technology

Write Your First Ethereum Smart Contract in Solidity

Location: Florida A

A smart contract is a program that facilitates, verifies, or enforces a set of conditions between parties and is executed on the blockchain. DApps are blockchain-enabled websites that consist of a frontend and a smart contract that operate on a blockchain. Similar to how a website has Javascript and HTML in the frontend, so does a DApp, but instead of an API to talk to a database, it has a smart contract that reads from and writes to the blockchain.

THURSDAY PROGRAM SCHEDULE

Cryptocurrencies are digital assets that use cryptography to secure the spending and receiving of funds. A blockchain is a digital ledger in which these transactions are recorded chronologically and publicly. A smart contract can be coded on top of various blockchains. We will use the Ethereum blockchain for this workshop. Ethereum gained wild popularity when it came out a few years ago because it did what bitcoin did not—it provided a Turing-complete programming language and straightforward platform for developers to build on top of. Come learn how to harness the full power of blockchain by building your first smart contract! In this session, we will write a Solidity smart contract in which users can groom, send, and receive CryptoKats, a knock-off of the wildly popular Cryptokitties. Since the workshop is only one hour, you will be given instructions for integrating it with a frontend application to have a full-blown DApp post-workshop. Participants should have intermediate web skills and object-oriented design thinking. No knowledge of blockchain or Dapps necessary. We will code in Solidity, a statically-typed contract-oriented programming language for Ethereum that resembles Javascript and Python. Participant laptops must run Remix, a Solidity IDE, on a web browser such as Chrome.

Presenters: **Amy Yin**, Coinbase; **Jane Chung**, Coinbase Consumer

Level Up! Boosting Your Career XP

Location: Florida B

Women, Black, and Latino tech workforce numbers are low, and studies show that they are leaving the industry at significantly higher rates than white men. How can we set ourselves up for long-term success despite these odds? This workshop empowers underrepresented groups to take control of their careers and navigate the ranks of junior to senior developer with support and practical tools and tips for advancement.

Presenter: **Anna Arenas**, Electronic Arts, BioWare

What Would You Say if... Responding to Microaggressions, Bias, and Other Nonsense

Location: Orlando M

The workshop seeks to help attendees create a more inclusive environment by building their capacity to address and respond to bias in their environments. In this interactive session, attendees will learn strategies for responding to bias in their settings and advocate for diversity initiatives. Attendees will then practice those strategies in small groups. This will be facilitated by playing two rounds of a research-based game learning approach developed

by the NSF project [CSTEachingTips.org \(#1339404\)](https://www.csteachingtips.org/#1339404), which has been tested in group of 200 teaching assistants and at the Special Interest Group for Computer Science Education (SIGCSE). This is the sixth iteration of the game-learning approach and all attendees will receive a printed copy of the game and a link to download and print more copies.

Presenters: **Colleen Lewis**, Harvey Mudd College; **Catherine Ashcraft**, National Center for Women & Information Technology (NCWIT); **Kyla McMullen**, University of Florida

High Performance Computer Networking: Moving Data Fast, Easily, and Securely: Part I

Location: Discovery 44

High performance computing is a powerful tool that put into hands of creative minds is helping humanity solve its hardest problems. This hands-on workshop will focus on the ethernet (Session1) and high-speed networks (Session2)- the nervous system that provides access to and unleashes the power of the supercomputer. You will have an opportunity to learn how these technologies are deployed at Los Alamos National Laboratory in support of its world-class high performance computing platforms, which are used to research and solve national grand-challenge scientific problems. In Session 1 you will learn about the fundamentals of TCP/IP and how it contributes to the supercomputers and get your hands on switches that LANL uses.

Please bring your own laptop. Prior knowledge of networking concepts will be helpful, but is not a prerequisite.

Workshop is limited to 30 participants.

Presenters: **Carolyn Connor**, Los Alamos National Laboratory; **Jesse Martinez**, Los Alamos National Laboratory

Google SRE Classroom, or An Introduction to the Profession of Site Reliability Engineering; and How To Build a Reliable Distributed System

Location: Florida C

Participants in this workshop will learn principles of systems design, and work in small groups to apply the concepts to a real-world distributed-systems design problem. A description of site reliability engineering as a professional discipline will precede the workshop.

Presenter: **Salim Virji**, Google



Women of Color in Computing: Addressing the Double-Bind Through A Researcher-Practitioner Collaborative

Location: Orlando N

This panel will bring together a group of professionals leading a new initiative to increase the scholarship on women of color in computing and apply research findings across settings in order to increase the participation of women of color in computing. The panel will inform participants about the challenges encountered by women of color in pursuing computing, while providing attendees with knowledge about existing initiatives and interventions that are effectively transforming experiences and outcomes for women and girls of color. The panel will also include small-group discussion time, where audience members can discuss how to apply knowledge gained to their particular settings, exchange best practices, discuss challenges in this work, and share recommendations for collectively pushing this applied research agenda forward.

Panel Moderator: **Frieda McAlear**, Kapor Center for Social Impact

Panelists: **Allison Scott**, Kapor Center for Social Impact; **Kimberly Scott**, Arizona State University

12:30 PM - 2:00 PM

Tapia Student Poster Competition/ACM Student Research Competition (SRC) & Lunch

Location: Regency Foyer & Regency O-R

The Tapia technical student poster session provides an opportunity for undergraduate and graduate students to present their latest research results and methodologies to a wide conference audience. Winners of the top posters (1st, 2nd, & 3rd place) will be recognized at the conference banquet.

Tapia 2018 is again hosting an ACM Student Research Competition (SRC), sponsored by Microsoft Research. The ACM SRC consists of two phases: (1) poster presentation (being part of the traditional research poster session), and (2) research talk. In Phase 2, selected students will give a short presentation of their research before a panel of judges in a special session at Tapia 2018. The winners of the ACM SRC competition at Tapia will be invited to participate in the ACM Student Research Competition Grand Finale.

Graduate Posters

1. Artificial Neural Networks Based Flood Forecasting (Graduate)

Presenter: Muhammed A. Sit (University of Iowa)

Co-author: Ibrahim Demir (University of Iowa)

2. Deep Neural Networks for Compressed Image Reconstruction (Graduate)

Presenter: Omar DeGuchy (University of California, Merced)

Co-authors: Fabian Santiago (University of California, Merced), Mario Banuelos (University of California, Merced), Roummel F. Marcia (University of California, Merced)

3. Device Free Indoor Localization Using Machine Learning Based Classification Approach (Graduate)

Presenter: Tahsina Farah Sanam (Rutgers University)

4. Energy-Aware Workflow Optimization in Clouds using Bat Algorithm (Graduate)

Presenter: Yi Gu (Middle Tennessee State University)

Co-Author: Chandu Budati (Middle Tennessee State University)

5. Flood Action VR: A Virtual Reality Framework for Disaster Awareness and Emergency Response Training (Graduate)

Presenter: Yusef Sermet (University of Iowa)

Co-author: Ibrahim Demir (University of Iowa)

6. Persona Generation for Human Trafficking Victims (Graduate)

Presenter: Joanna Cao (California Polytechnic University, Pomona)

Co-author: Nada Alghofaili (California Polytechnic University, Pomona)

7. Replay-resilient Physical-layer Authentication for Battery-free IoT Devices (Graduate)

Presenter: Ge Wang (Xi'an Jiaotong University, University of California, Santa Cruz)

Co-authors: Haofan Cai (University of California, Santa Cruz), Minmei Wang (University of California, Santa Cruz), Chen Qian (University of California, Santa Cruz), Jinsong Han (Xian Jiaotong University)



8. Scalable Long Read Alignment for Genome Assembly (Graduate)

Presenter: Marquita M. Ellis (University of California, Berkeley)

9. Secure Shutdown with Dynamic System Call List for Application Containers (Graduate)

Presenter: Xinda Wang (George Mason University)
Co-Author: Kun Sun (George Mason University)

10. STDN: Spatial-Temporal Denoising Net for Radiation Optimization in CT Perfusion (Graduate)

Presenter: Yao Xiao (University of Florida)
Co-authors: Peng Liu (University of Florida), Yun Liang (University of Florida), Ruogo Fang (University of Florida)

11. A Testbed for Scientific Workflow Scheduling and Management in the Cloud (Graduate)

Presenter: Jeffrey Hooper (Middle Tennessee State University)
Co-author: Yi Gu (Middle Tennessee State University)

Undergraduate Posters

12. Evaluation of Child-directed Speech Through Network Analysis and Automatic Speech Recognition (Undergraduate)

Presenter: Rebekah Manweller (University of Kansas)
Co-authors: Erick Oduniyi (University of Kansas), Nicole Beckage (University of Kansas), Jonathan Brumberg (University of Kansas)

13. The Impact of Early Interventions on Middle School Girls' Confidence in Computing (Undergraduate)

Presenter: Elana Katzen (University of Maryland, College Park)

14. R-SAM: A Robust Stroke Rehabilitation System Augmented by Smartphone and Additive Manufacturing (Undergraduate)

Presenter: Zhuolin Yang (State University of New York at Buffalo)
Co-authors: Matthew Charles Stafford (State University of New York at Buffalo), Wenyaoy Xu (State University of New York at Buffalo)

ACM SRC Competition Posters

Graduate

15. Energy Efficiency and Throughput Maximization for Workflow Scheduling in a Faulty Cloud Environment (Graduate)

Presenter: Huda Alrammah (Middle Tennessee State University)
Co-author: Yi Gu (Middle Tennessee State University)

16. Improving Visual Accessibility of R STUDIO, GITHUB, Python, Linux and GIT-Bucket for severely visually impaired computer users (Graduate)

Presenter: Thomas Hahn (University of Arkansas at Little Rock)

17. Isosurface Visualization Using Augmented Reality for Improving Tumor Resection Outcomes (Graduate)

Presenter: Niveditha Kalavakonda (University of Washington)

18. Learning Deep Feature Representations for Kinase Polypharmacology (Graduate)

Presenter: William D. Jones (University of Kentucky)
Co-authors: Nathan Jacobs (University of Kentucky), Sally R. Ellingson (University of Kentucky)

19. A Message-Passing Parallel Algorithm for the Steiner Forest Problem (Graduate)

Presenter: Laleh Ghalami (Wayne State University)

20. Multi-dimensional Features for Prediction with Tweets (Graduate)

Presenter: Nupoor Gandhi (University of Illinois at Urbana – Champaign)
Co-authors: Alex Morales (University of Illinois at Urbana-Champaign), Dolores Albarracin (University of Illinois at Urbana-Champaign)

21. Rapidly Exploring Random Search Explorer (Graduate)

Presenter: Aakriti Kumari Upadhyay (Albany State University)

22. Real-Time Sleep Causality Analysis (Graduate)

Presenter: Zohreh Raghebi (University of Colorado, Denver)

23. Synthetic CT Generation from MRI Data Using Generative Adversarial Networks (Graduate)

Presenter: Hajar Emami Gohari (Wayne State University)



24. A System for Non-Intrusive Affective Assessment in the Circumplex Model from Pupil Diameter and Facial Expression Monitoring (Graduate)

Presenter: Sudarat Tangnimitchok (Florida International University)

25. T4SS Effector Protein Prediction: Feature Selection (Graduate)

Presenter: Zhila Esna Ashari Esfahani (Washington State University)

26. Towards personalized gamification to promote Physical Activity (Graduate)

Presenter: Christian Enmanuel Lopez Bencosme (Pennsylvania State University)

27. Towards a Virtual Assistant Health Coach: Corpus Collection and Annotations (Graduate)

Presenter: Itika Gupta (University of Illinois at Chicago)

28. 2D Scene Image-Based 3D Scene Retrieval: A Semantic Approach Based on R-CNN (Undergraduate)

Presenter: Hameed Abdul-Rashid (University of Southern Mississippi)
Co-author: Bo Li (University of Southern Mississippi)

29. Spreading Interest in Information Technology through Video Games (Undergraduate)

Presenter: Erik Jenkins (Georgia Gwinnett College)
Co-authors: Anjan Panchatcharam (Georgia Gwinnett College), Jessica Wheeler (Georgia Gwinnett College), Rahaf Barakat (Georgia Gwinnett College), Cengiz Gunay (Georgia Gwinnett College)

30. Women of Color and Role in Video Games (Undergraduate)

Presenter: Ma'kiah Holliday (Rochester Institute of Technology)
Co-author: Adrienne Decker (Rochester Institute of Technology)

31. Your Story Recorded in a Magnet: Micromagnetic Simulations of Spin-Orbit Torque in Multi-layer Structures (Undergraduate)

Presenter: Elizaveta Tremsina (University of California, Berkeley)

2:00 PM - 3:30 PM

Disability Disclosure in Education and Employment

Location: Orlando M

Students with disabilities often have questions about if, when, and how they should share information about their disability in the context of education and employment. It is important to be strategic and intentional about these conversations, customizing their approach in different settings. Panelists will describe their experiences disclosing disability in both education and employment settings and offer advice to others who are navigating these conversations. Participants can learn about strategies for disability disclosure and ways to best support individuals with disabilities in education and employment.

Panel Moderator: **Brianna Blaser**, AccessComputing & University of Washington

Panelists: **Meenakshi Das**, Mississippi State University; **Wing Lam**, University of Illinois at Urbana-Champaign; **Vincent Martin**, Georgia Institute of Technology; **Jessie Zhang**, University of Washington

Increasing Diversity in Computing: Sharing of Good Practices

Location: Orlando N

This panel will provide an opportunity for representatives from the NSF-funded Broadening Participation in Computing Alliances and other organizations to share their good practices about increasing diversity in computing. The NSF BPC Alliances were established between 2006 and 2009 to increase the number and diversity of college graduates in the computing and computationally-intensive disciplines. The Alliances are national and regional collaborations of academic institutions, educators, professional societies, community organizations, and industry partners. The panel will begin with an introduction to the following NSF BPC Alliances and other organizations: AccessComputing, CAHSI, CMD-IT, CRA-W, ECEP, IAAMCS, NCWIT, and STARS. The panelists will share information about their organization and how their programs have broadened participation in computing via a world cafe

THURSDAY PROGRAM SCHEDULE

setting. The session will include sufficient time, at least one hour, for questions and discussions.

Panel Moderator: **Valerie Taylor**, CMD-IT

Panelists: **Renee Fall**, ECEP; **Jannie Fernandez**, NCWIT; **Ann Gates**, CAHSI; **Juan Gilbert**, IAAMCS; **Ayanna Howard**, CRA-W; **Richard Ladner**, AccessComputing; **Jamie Payton**, STARS

Free Social Media and the Implications of Attention Harvesting

Location: Orlando L

Social media has fundamentally changed how we interact with one another in many positive ways. We use it to connect with and keep in touch with friends, accelerating the spread of information, and even enabling social change. However, concerns abound around attention harvesting and data ownership.

For-profit social media platforms that offer “free” access are in the business of selling the attention and content of its users to advertisers and other 3rd parties. This phenomena has been described by Tim Wu, in the book *The Attention Merchants*, as attention harvesting. Paying attention to good content usually provides mutual benefit to the platform owners, content creators, and content consumers. The platform owners and content creators are compensated with money. Content consumers benefit in form of entertainment. In general, most content consumers understand this relationship: if you read, watch, or listen to compelling free content that is distributed by for-profit corporations, advertisers will leverage your attention and inject product and service advertisements into that content. However, on many for-profit social media platforms, this general understanding is blurred because the users are both content creators and content consumers.

The Social Media and Attention Harvesting panel discussion will focus on the following questions:

- 1). Should we pay for access to social media platforms to reduce the harvesting of our attention?
- 2). Should content creators on social media platforms be directly paid for their content?
- 3). Do social media platforms that rely on attention harvesting encourage race-to-the-bottom content?
- 4). Who should own the content created on free social media platforms?

Moderator: **Aubrey Rembert**, NextBigSound/Pandora

Panelists: **Sumit Purohit**, Pacific Northwest National Labs; **Dare Obasanjo**, Microsoft

All You Wanted To Know About Publishing Research But Were Afraid To Ask

Location: Florida B

Publishing your research can be scary, especially for graduate students who are just starting on the research journey. The goal of this workshop is to demystify the research publication process and provide answers to common questions about the process.

Presenters: **Manuel Pérez-Quñones**, University of North Carolina at Charlotte; **Juan Sequeda**, Capsenta.

Taking on the Technical Interview

Location: Florida C

The job search (be it for an internship or a full-time) for a software engineering position usually involves one or more technical interviews. We’d like to provide tips, tricks, strategies and practice to help you present your technical abilities during this often stressful process.

Presenters: **Eric Yurko**, Google; **Antoine Picard**, Stanford; **Cynthia Lee**, Stanford; **Kaanon MacFarlane**, Pinterest; **Lea Coligado**, Google

Research and Business Opportunities in Distributed Ledger and Blockchain Technology

Location: Manatee Spring

Traditional mechanisms for executing and recording transactions (electronic or otherwise) are being disrupted by distributed ledger technology, most notably blockchains. Institutions involved with activities such as financial services, supply chain management, and healthcare are all grappling with how to capitalize on a distributed transactional framework that synchronizes up-to-date information through consensus. Potential opportunities of distributed ledger technology include improving security and resilience in transactional processes, improving smart contract and auditing mechanisms, and empowering service end-users to enforce trust without resources and/or censorship of



central authorities. Perhaps the most popular application of distributed ledger technology today is cryptocurrency such as Bitcoin.

The relative nascency of distributed ledger technology presents an excellent opportunity to investigate challenges in maturing the technology. This panel discussion will address the following challenges, hopefully encouraging new research and business development.

How do we redefine and support governance in distributed ledger technology?

What are security implications and areas for future development regarding blockchain, especially dealing with data privacy, and who's to blame when privacy is compromised?

What new security controls and encryption schemes are required?

What computational power and energy usage are required to manage distributed ledger technology applications, and what advances are being made?

What challenges are involved in setting standards for distributed ledger technology, what industries stand to gain the most, and what stakeholders are needed, especially to enable interoperability between DLT/blockchains?

Moderator: **Joel Branch**, Lucid, Inc

Panelists: **Katie Chase**, Fidelity Investments; **Sandeep Gopisetty**, IBM

3:30 PM - 4:00 PM

Refreshment Break

Location: Plaza International Ballroom Foyer

4:00 PM - 5:00 PM

Tech Talks

Sponsored by Two Sigma

Location: Orlando N

Human Skill in Machine Learning

Predictive Modeling and Supervised Learning are staple techniques in the Data Science arsenal of algorithms. Supervised machine learning or predictive modeling covers a large set of techniques that all rely on representative historical data that includes both a (possibly very large) set of features

and a dependent variable that is learned as a function of those features. Example applications of these tools include a wide variety of tasks: image classification (cats, street signs), sentiment analysis of documents, medical diagnosis, targeted advertising, music composition, automated translation, stock movement predictions, or games such as chess, Go, and poker. Today, machines have been shown to be equal or better at the above mentioned tasks than humans. In the recent past, there has been an ever expanding list of successes that now give rise to concerns that large parts of the human workforce might become superfluous, possibly even the very data scientists who traditionally labored hard to create these solutions. Despite all the recent advances, machine learning models are only as good as the skills and experience of the data scientists who created them. Indeed, as good as the technology and new algorithms are, more often than not, the challenges rest with the data. This talk takes on some of the more broadly asked questions around what machine learning is good at and what it is not. It covers a number of case studies where the skillful adjustments and alternative perspectives of a data scientist provide creative solutions.

Presenters: **Claudia Perlich**, Two Sigma

Lessons from Industrial Manufacturing

Failure Mode and Effects Analysis (FMEA), is a technique to identify and address potential points of failure within a process and their resulting effects on a system, prior to failures occurring. It is an industry-standard technique in manufacturing and product design. FMEA is based on a framework first developed in the United States Military. The technique gained wide usage at NASA beginning in the early 1960s, then became a common practice in manufacturing. This talk focuses on applying Process Failure Mode and Effects Analysis (PFMEA) to data pipelines to improve pipeline reliability. As businesses continue to ingest and utilize more and more data, the reliability of their data pipelines becomes paramount for success. Delays and errors in gathering, transforming, and accessing data have ripple effects across business processes and expose customers and end-users to a variety of consequences. Applying PFMEA to data pipelines is



a unique application of the tool which allows companies from various disparate industries to leverage proven techniques for reliability improvement.

This talk will review PFMEA methodology, then provide an example of how to apply it to a simple data pipeline. Finally, we will touch on the challenges and benefits of utilizing the technique.

Presenter: **Elizabeth Martens**, Two Sigma

Birds of a Feather Sessions

Disability: Celebrating a Face of Diversity

Location: Orlando M

There is great diversity among individuals with disabilities, but there are also many common experiences. This Birds of a Feather session will bring together people who have a disability or who are interested in supporting individuals with disabilities. The goal of the session is to learn from each other about strategies for achieving success and ensuring that computing is welcoming and accessible to individuals with disabilities. Topics discussed will include: accessibility in computing education, disclosing disability in interviews, and recruiting and retaining employees and interns with disabilities. The session will include information about internships, mentoring, and career development opportunities available from AccessComputing, an NSF-funded Broadening Participation Alliance.

BOF Organizers: **Richard E. Ladner**, University of Washington; **Brianna Blaser**, University of Washington

Visualization Research and Careers

Location: Orlando L

Visualization plays a significant role in the exploration of data across all disciplines. Visualization tools and techniques have the ultimate goal of understanding the complex relationships that exist within data. Join us at this Birds of Feather session to learn about Information and Scientific Visualization. We'll go over useful topics such as learning resources, design principles, applications (Gephi, ParaView), languages (D3, Processing), conferences (IEEE VisWeek, XSEDE, VIZBI, BioVis), and public data resources. Come learn about the computational visualization skills that can prepare you for careers as a researcher or practitioner in areas such as Human Computer Interaction, High Performance

Computing, bioinformatics, imaging, data science, analytics, and more. We will also describe diversity in visualization opportunities such as Research Experience for Undergraduates as well as the Broadening Participation in Visualization (BPViz) Workshop.

BOF Organizers: **Alberto Roca**, Diverse Scholar; **Ron Metoyer**, University of Notre Dame; **Vetria Byrd**, Purdue University

Giving Back While Moving Forward: Sharing Strategies for Integrating Research and Action for Equity and Inclusion into Your Computing Career

Location: Florida A

In this Birds of a Feather session, we will discuss strategies for individual students, faculty, and institutions to develop and lead efforts focused on improving inclusion, equity, and diversity in computing. Exemplary efforts that computing students, faculty, and computing professionals have used to broaden participation include mentoring, tutoring, K12 outreach, expanded research opportunities, and service learning. In this session, we invite participants to seek and share resources that can lower the barriers to engaging in outreach and research for broadening participation in computing. We will also discuss strategies for choosing projects that leverage local resources and opportunities, promote personal professional development, and contribute to institutional improvement.

BOF Organizers: **Jamie Payton**, Temple University; **Tiffany Barnes**, North Carolina State University

Racial Microaggressions, STEM Identity, and Impostor Feelings: An Analysis of Black Engineering and Computing Doctoral Students

Location: Florida B

In this paper, we analyzed how racial microaggressions made students feel as though their STEM identity was challenged, exacerbating feelings of impostorism. Following Sue et al.'s framework (2007) we specifically analyzed environmental, verbal, and behavioral microaggressions, with a particular focus on Black students' interactions with other peers in their program. Data were collected through semi-structured



interviews with 30 Black PhD students regarding their doctoral experiences. Across the interviews, participants expressed various forms of racial microaggressions that greatly challenged their sense of belonging and identities as scientists through the process of identity non-verification, leading them to feel as though they were impostors in these spaces. This research affirms the need to instate initiatives at the institutional or departmental level to make engineering and computing programs more inclusive spaces for diverse students and to combat the types of exclusionary practices seen in this research.

BOF Organizers: **Monica L. Ridgeway**, Vanderbilt University; **Amanda Brockman**, Vanderbilt University; **Dara Naphan-Kingery**, Vanderbilt University

Supporting Hispanics and Latinx in Computer Science

Location: Florida C

The field of computer science is growing and diversity initiatives are bringing in more hispanic and latinx students. It is not enough to provide support for minorities as a whole, each group has different needs and so also arises the need for specialized communities. The Hispanic Association for Computer Science (HACS) is one such community and we would like to share our ideas and success with others and offer the opportunity to create a network of organizations throughout multiple universities. We want to discuss ideas for outreach and retention of Hispanic and Latinx students, as well as strengthening existing communities. There are some organizations that cover engineering as a whole but having an organization dedicated specifically to computer scientists has made all the difference at our university. HACS is about more than just networking, it is about students supporting students.

BOF Organizers: **Jesus Palos**, University of Texas at Austin; **Sabrina Herrero**, University of Texas at Austin

5:00 PM - 6:00 PM

Tech Talks

Sponsored by Fidelity Investments & Wayfair

Empowering Career Success and Team Greatness Through Advocacy

My journey to becoming a VP of Software Engineering at a large financial institution has required equal parts

grit, tenacity, and risk-taking, along with some luck, and most important, the help of mentors. My greatest career successes have come when my mentors have also played advocate. If you want to help someone achieve professional success, there is no substitute for the two-pronged approach of mentorship and advocacy. Advocacy does not need to be limited to an individual – it can be woven into a team’s culture, providing a guiding principle, a North Star, for the entire group. Team diversity, respect, and mutual trust are essential for a high-functioning and truly innovative team. These results don’t materialize by accident. When there is intentional advocacy, it becomes part of a team’s DNA. While it is not necessary for advocacy to come from a senior leader, the culture of a team is typically set from the top. As leaders representing diverse backgrounds, experiences, and ethnicities, we have an obligation to elevate each other, and in turn, our teams. We must correct imbalances that come from all forms of bias, especially unconscious. We must be intentional in creating a culture that embraces diversity. At Fidelity Labs, we live by these principles. We unleash the power of innovation and creativity through our values-based, aspirational approach to problem solving, and, most importantly, our deeply diverse teams. This allows us to create and deliver sustainable, best-in-class solutions, built upon the insights of multiple points of view that contribute to improving the lives of the people we serve. Intentional advocacy is the key that makes all this possible. Think about your professional relationships... Who could use an advocate? How can you help them achieve their goals?

Presenter: **Frine Carbonelli**, Fidelity Investments

Machine Learning Techniques to Power Dynamic Pricing

Wayfair has over 10 million products spanning home furnishings, housewares and home improvement goods and more, making it a “one stop shop” for everything home. With nearly 1,600 engineers and data scientists, its team is constantly finding innovative ways to solve the hardest problems in its highly competitive industry. Among those many challenges, is that a variety of internal and external conditions can trigger pricing changes, from supplier inventory to surges in demand and more. Wayfair employs dynamic

THURSDAY PROGRAM SCHEDULE

pricing to address that phenomenon of pricing fluidity in ecommerce. To guide decisions around price changes in response to these situations and triggers, Wayfair uses several Machine Learning techniques. Attendees will learn about several initiatives for which Wayfair uses feature engineering and supervised learning techniques to achieve forecasting precision. These projects will illustrate Wayfair's ability to react quickly and decisively amid changing market conditions, while maintaining accuracy amid increasing complexity at scale. Each of the real-world examples explored during this talk will showcase the intersection of business, data science and engineering.

Presenter: **Jomar Delores**, Wayfair

Birds of a Feather Sessions

Life as a Liberal Arts College CS Professor

Location: Orlando M

This BoF is intended to be a place of discussion for liberal arts college (LAC) faculty and those interested in a LAC faculty career. Liberal arts colleges (LACs) offer an oft overlooked career option for computer science scholars. LACs offer an environment that values both teaching and scholarship within the scope of an undergraduate education. This BoF will allow participants to explore this niche, and some of the consequences of its selective pressures: smaller class sizes, smaller departments, broader curricula, and the absence of graduate students when conducting research.

In addition to a discussion of job specifics with current faculty, we intend that the BoF will also allow graduate and undergraduate students to ask questions of established LAC faculty. Current job seekers will be given space to discuss how they can make themselves competitive for LAC job opportunities and seek advice from faculty who have previously served on search committees.

BOF Organizers: **Valerie Summet**, Rollins College; **Keith O'Hara**, Bard College

Multiple Perspectives on Introducing Data Analytics

Location: Orlando L

Data science is an interdisciplinary field requiring knowledge that intersects statistical analysis, computer science, and subject matter expertise. Data scientists are in high demand to meet the challenge of storing, analyzing, and

visualizing Big Data. Given the technical and analytical skills required, computing students may be drawn to this field but lack specialized content and stats knowledge. Business students may have the requisite background in statistics but lack the technical skills. What are some approaches for introducing both sets of students to this lucrative career option in an accessible, engaging way? In this BoF, we will share information about two approaches to teaching an introductory data analytics course. One approach uses materials from SAP's Academic Alliance, providing exposure to several enterprise-level tools. The other approach uses Microsoft's Power Business Intelligence suite, leveraging student's existing knowledge of Excel. An overview of each course and sample assignments will be made available via a website given to participants. We welcome BoF participants who are interested in or already incorporating data analytics content into their courses. Some participants may be interested in trying out a short unit inside a computer literacy course. Others may be charged with developing an entire course. As a group, we will identify useful data sources, discuss pros and cons of various tools, describe obstacles faced by our students, and share successful pedagogical strategies. We will also discuss ways of forming a community for continuing the conversation after the BoF concludes.

BOF Organizers: **Nannette Napier**, Georgia Gwinnett College; **Evelyn Brannock**, Georgia Gwinnett College

Addressing Impostor Syndrome

Location: Florida A

Impostor syndrome is where individuals doubt what they achieve, believe they are a fraud, and that they don't belong. This especially affects underrepresented minorities pursuing computer science. Although many experience impostor syndrome, it disproportionately affects underrepresented groups, which is a barrier for increasing diversity. This panel will feature an open discussion on impostor syndrome in computer science. In particular, we'll share our experience of creating a highly-popular workshop on impostor syndrome for our CS department. We'll discuss the work that went into organizing our event, what was successful, and what we learned. Then, we'll lead a discussion of how other schools



can create similar programming to help their students manage impostor syndrome. Through conversations, we hope to normalize the experience of impostor syndrome, helping students cope with these anxieties in the future. We hope this session will be particularly helpful for students and individuals new to computer science.

BOF Organizers: **Nicole Riley**, University of Washington; **Alexandra Klezovich**, University of Washington

Defining Your Own Success: Self-Care & Achievements as a Minority in a Majority Workplace

Location: Florida B

Minorities have to overcome societal obstacles in order to succeed, but are we part of the problem? Can we recognize and change the internal patterns of minimizing ourselves before we come to let them control our success? This talk will include reminiscences about self-sabotage, overcoming shame and guilt in a workplace that doesn't seem to have room for your authentic self, and how to advocate from both sides of the manager/direct report relationship. You'll leave with tips on how to build self-awareness, reprogramming bad habits, and incorporating emotional honesty into your work. If you resonated with the Imposter Syndrome, but haven't found solutions to this problem or noticed the micro-aggressions that you are navigating in addition to the Imposter Syndrome, then this session is for you!

BOF Organizer: **Maybellin S. Burgos**, Anita Borg Institute

Hispanics in Computing

Location: Florida C

The main goal of this gathering is to bring together members of an online community to broaden participation of other latinos/hispanics in computing. Every year we recruit new members to the listserv and identify new connections between established members of the community with new students. The gathering usually involves some icebreaking activities as well Q&A for the new members of our community.

BOF Organizers: **Manuel A. Pérez Quiñones**, University of North Carolina at Charlotte; **Daniel Garcia**, University of

California, Berkeley ; **Jose Andre Morales**, Carnegie Mellon University

6:00 PM – 7:30 PM

Hispanics in Computing Reception

Sponsored by the Aerospace Corporation

Location: Florida C

Join us for an informal reception to discuss how we can increase the participation of Hispanics in Computing. We would like to encourage more Hispanic high school students to pursue careers in computing, more Hispanic college students to pursue research careers in computing, and encourage industry to provide support for the recruitment, mentoring, and retention of Hispanics in Computing. Come meet some of the members of the Hispanics in Computing listserv!

7:00 PM - 8:30 PM

AnitaB.org Community Meetup

Sponsored by AnitaB.org

Location: Barrell Spring

Join AnitaB.org at their reception to meet members, learn about their initiatives and how to engage.

FRIDAY PROGRAM SCHEDULE

8:00 AM - 9:00 AM

General Breakfast

Location: Regency Foyer & Regency O-R

CMD-IT Advisory Board Breakfast

By invitation only

Location: Discovery 46

9:00 AM - 9:30 AM

Announcements

Location: Regency O-R

9:30 AM - 10:30 AM

Ken Kennedy Distinguished Lecture

Location: Regency O-R

Moshe Y. Vardi, *George Distinguished Service Professor in Computational Engineering & Director, Ken Kennedy Institute for Information Technology at Rice University*

Humans, Machines, and Work: The Future is Now

Automation, driven by technological progress, has been increasing inexorably for the past several decades. Two schools of economic thinking have for many years been engaged in a debate about the potential effects of automation on jobs: will new technology spawn mass unemployment, as the robots take jobs away from humans? Or will the jobs robots take over create demand for new human jobs?

I will present data that demonstrate that the concerns about automation are valid. In fact, technology has been hurting working-class people for the past 40 years. The discussion about humans, machines and work tends to be a discussion about some undetermined point in the far future. But it is time to face reality. The future is now.

I will conclude with a discussion of the social responsibility of computing professionals.

BIOGRAPHY:

Moshe Y. Vardi is the George Distinguished Service Professor in Computational Engineering and Director of the Ken Kennedy Institute for Information Technology at Rice University. He is the recipient of three IBM Outstanding Innovation Awards, the ACM SIGACT Goedel Prize, the ACM Kanellakis Award, the ACM SIGMOD Codd Award, the Blaise Pascal Medal, the IEEE Computer Society Goode Award, the EATCS Distinguished Achievements Award, the Southeastern Universities Research Association's Distinguished Scientist Award, and the Church Award. He is the author and co-author of over 500 papers, as well as two books: Reasoning about Knowledge and Finite Model Theory and Its

Applications. He is a Fellow of the Association for Computing Machinery, the American Association for Artificial Intelligence, the American Association for the Advancement of Science, the European Association for Theoretical Computer Science, the Institute for Electrical and Electronic Engineers, and the Society for Industrial and Applied Mathematics. He is a member of the US National Academy of Engineering and National Academy of Science, the American Academy of Arts and Science, the European Academy of Science, and Academia Europaea. He holds honorary doctorates from the Saarland University in Germany, Orleans University in France, UFRGS in Brazil, and the University of Liege in Belgium. He is currently a Senior Editor of the Communications of the ACM, after having served for a decade as Editor-in-Chief.

10:30 AM - 5:00 PM

Graduate Application Review Clinics and Interviews with Sponsors

Location: Plaza International Ballroom

Academic sponsors (faculty and staff from a university) will hold 1-on-1 meetings with students in their exhibit booth on (1) discussing the university's recruitment information or/and (2) conducting graduate application clinics. For the graduate application clinics, a student is encouraged to bring in their resume draft and optionally but desirably their personal statement draft to gather improvement feedback from academic sponsors. 1-on-1 meeting slots are recommended to be 15 mins each but academic sponsors can decide on the time duration dependent on the needs and demands from both parties.

10:30 AM - 12:00 PM

SRC Competition Round II

Location: Florida B

High Performance Computer Networking: Moving Data Fast, Easily, and Securely: Part II

Location: Discovery 44

High performance computing is a powerful tool that put into hands of creative minds is helping humanity solve its hardest problems. This hands-on workshop will focus on the ethernet (Session 1) and high-speed networks (Session2)- the nervous system that provides access to and unleashes the power of the supercomputer. You will have an opportunity to learn how these technologies are deployed at Los Alamos National Laboratory in support of its world-class high performance computing platforms, which are used to research



and solve national grand-challenge scientific problems. In Session 2 you will learn about advanced high-speed networks, including InfiniBand and Intel® Omni-Path and have an opportunity to gain hands-on experience configuring these networks. *Workshop limited to 30 participants.*

Please bring your own laptop. Prior knowledge of networking concepts will be helpful, but is not a prerequisite.

Presenters: **Carolyn Connor**, Los Alamos National Laboratory; **Jesse Martinez**, Los Alamos National Laboratory

Roots of Innovation are Interdisciplinary

Location: Orlando M

Interdisciplinary work and backgrounds are sometimes perceived as less ‘serious’ and are undervalued in academic circles. In this panel, we challenge this notion and make the argument that the roots of innovation are interdisciplinary. The panelists will share their learnings and stories of engaging in successful (and at times not so successful) interdisciplinary ventures, how they were able to catalyze collaboration and how the sharing and reuse of insights from multiple areas helped them solve problems. The panel aims at shaping perceptions and increasing awareness of interdisciplinary research in computing.

Panel Moderator: **Bushra Anjum**, Amazon

Panelists: **Kiara Nahrstedt**, University of Illinois at Urbana-Champaign; **Cathy Wu**, UC Berkeley EECS; **George Netscher**, SafelyYou

Untold Stories of Black Women PhDs in Computing

Location: Orlando N

This panel will address the impact that Black Women PhDs in Computing have made in computing from both academia and industry. The personal stories shared will provide insight to the path to the PhD in computer science and the motivation for those desiring to diversify computing. With the focus being on increasing the number of underrepresented minorities in computing, this panel serves as an additional reference for Black women and women in both academia and industry.

This panel : I) speaks to the path of obtaining the PhD and the struggles to obtain the PhD due to the constraints of family obligations, organizational politics, and the like. II) addresses the contributions that these computer scientists have made to computer science. III) addresses the services that they have provided to broaden participation in computer science. IV) focuses on changing the face of technology through initiatives led by Black Women PhDs.

Panel Moderator: **Cheryl A. Swanier**, Claflin University
Panelists: **Cheryl D. Seals**, Auburn University; **Felicia R. Doswell**, Norfolk State University

Welcoming Students with Disabilities

Location: Orlando L

In considering diversity, computer science educators and computing organizations can take steps to ensure that they are welcoming and accessible to students with disabilities. Although students with disabilities comprise 13% of K-12 students and 11% of the undergraduate population, they are frequently left out of conversations about broadening participation. Panelists will discuss best practices and real-life examples of steps that faculty, administrators, and staff can take to ensure that departments, organizations, classes, and events are accessible to students and others with disabilities. Resources will be shared that participants can utilize when they return home.

Panel Moderator: **Jerri Barrett**, CMD-IT

Panelists: **Brianna Blaser**, University of Washington; **Maya Israel**, University of Florida; **Erik Russell**, Computing Research Association; **Martina Svyantek**, Virginia Tech

Dealing with Bias and Unfairness in Machine Learning Algorithms

Location: Discovery 45

Machine learning algorithms can encode a discriminative bias when training them with real data in which underrepresented groups are not properly characterized. Then a question quickly emerges: how can we make sure ML does not discriminate against people from minority groups because of the color of their skin, gender, or ethnicity? Even more, as the tech industry does not represent the entire population, underrepresented populations in computing such as Hispanics, women, African-Americans, Native Americans have limited control over the direction of machine learning breakthroughs. In this panel, we claim that it is our responsibility to advance the progress of machine learning by exposing this problem and proposing reliable solutions based on solid research. This will be done by increasing the presence of members of underrepresented groups that are able to build solutions and algorithms to advance the progress of this field towards a direction in which bias and unfairness are accordingly addressed.

Panel Moderator: **Omar Florez**, Capital One Research

Panelists: **Juan E. Gilbert**, University of Florida; **Alonso**

FRIDAY PROGRAM SCHEDULE



Martinez, Pixar Animation Studios; **Vicente Ordóñez Román**; **Laura Montoya**, Accel.AI; **Patricia Ordóñez Franco**, University of Puerto Rico Río Piedras

Cybersecurity 101 for Critical Infrastructures: A Hands-on Approach

Location: Florida A

Critical infrastructures, the systems that enable electricity to be generated and distributed for example, or those that ensure our water is purified using the correct mixture of chemicals, or the many systems that afford us automation on platforms like our Navy ships, have been a backbone of our society for many years now. Today though, their cybersecurity posture is more important than ever before. There have been multiple cases in recent years of how cybersecurity vulnerabilities in these types of systems have caused major physical damage (Ukraine 2015 power grid cyber attack). The problem is that traditional cybersecurity doesn't quite apply to these critical infrastructure systems. They were never intended to be secured, as they were not designed to be connected to the open internet. As such, traditional cyber security approaches can often times harm such systems. Through hands-on exercises and realistic demonstration equipment (small motors, actuators, and other mechanical components) the workshop organizers will provide a comprehensive understanding of how to baseline and secure these systems. In addition, the workshop will expose participants to cybersecurity 101 topics as well as emphasize the importance of multidisciplinary efforts like cybersecurity and energy systems. This topic is of great importance to the US Navy, and the workshop organizers have developed a hands-on curriculum to help students appreciate critical infrastructures and develop skills necessary to secure them. Lastly, the organizer is a Tapia alumnus, who, along with his team, believe in making cybersecurity not only relevant, but fun!

Presenter: **Jose Romero-Mariona**, SPAWAR Systems Center Pacific- US Navy

10:30 AM – 12:00 PM

Moving From Black Boxes to Explainable Artificial Intelligence

Location: Florida C

Seemingly constant advancements in deep learning are supporting a rising tide of autonomous decision-based systems and services. We are already enjoying the benefits of services such as voice-based assistants and image correction and annotation. However, applying large complex neural

network models to more sensitive applications like human behavior prediction, vehicle automation, medical diagnosis, and military engagement raises significant concerns. While deep learning has demonstrated breakthrough performance for some of the aforementioned applications, the rationale for automated decisions is often uninterpretable to critical stakeholders (e.g., doctors, patients, justice officials). Hence, explainable artificial intelligence becomes a very important topic. This includes (but is not limited to) advancements in research areas such as visual analytics for intuitively expressing deep learning model behavior and natural language processing (and other HCI techniques) for expressing rationale for deep learning model output. Improving AI explain-ability also requires fundamental innovations in deep learning model approaches (i.e., investigating alternatives to increasingly complex network structures). Overall, it is prudent that we recognize the risks and face the challenges associated with "black box" decision-making for critical applications. This panel will discuss such risks, the challenges/feasibility of explainable AI, as well as current advancements and untapped opportunities in developing explainable AI.

This panel will discuss such risks as well as current advancements and untapped opportunities in developing explainable AI.

Moderator: **Joel Branch**, Lucid, Inc.

Panelists: **Mehdi Nourbakhsh**, Autodesk; **J. White Bear**, MIT Lincoln Laboratory; **Meg Pirrung**, Pacific Northwest National Laboratory

12:00 PM - 1:30 PM

General Lunch & Networking

Location: Regency Foyer & Regency O-R

Faculty Luncheon

By invitation only

Location: Barrell Spring

Autodesk Student Luncheon: Humans, AI, and Diversity - Transforming the Customer Experience with AI

Sponsored by Autodesk

Pre-registration Required

Location: Rainbow Spring

If you are a Junior or Senior in the 2018-2019 academic school year, join us at the Autodesk Luncheon and hear from the team behind AVA (Autodesk Virtual Agent). AVA is taking us beyond the chatbot in her persona, with a consistent



voice that represents our Autodesk brand and desired agent characteristics, and drives dialogue to best assist our customers. During this luncheon you will network one on one with our engineers and learn about a day in a life of an Autodesk engineer.

1:30 PM - 3:00 PM

Faculty Workshop Part II - Effective Student Retention Strategies

Location: Manatee Spring

The second part of the faculty workshop will focus on student retention of underrepresented students, as it is recognized that good retention is important to improve student graduation rates. This session will include a presentation from the recipient of the CMD-IT University Award for Retention of Minorities and Students with Disabilities in Computer Science. The presentation will be followed by engaging discussions about recruiting, yield, retention and graduation of underrepresented students in undergraduate Computer Science programs. The session provides an opportunity for participants to share effective practices.

Five Days that Transformed My Teaching

Location: Orlando N

Exploring Computer Science (ECS) is a combination of curriculum and professional development designed to be a broad introduction to CS for all high school students, with an emphasis on promoting equity in the classroom. The creators' primary objective was to create an engaging CS classroom that is attractive to all students and thus contains the same demographics among the students in the classroom as the surrounding neighborhood in terms of gender, ethnicity and socioeconomic status. The curriculum is based on years of research and its raison d'être has been to democratize computer science education. Our participation in going through the professional development of ECS has fundamentally changed our philosophy and the way we teach our college courses, in particular with regard to equity and guided inquiry teaching practices. We will also talk about how the ECS curriculum and PD have been adapted for Puerto Rico, Chicago and Utah.

Panel Moderator: **Joanna Goode**, University of Oregon

Panelists: **Joanna Goode**, University of Oregon; **Helen Hu**, Westminster College; **Patricia Ordóñez**, University of Puerto Rico Río Piedras; **Dale Reed**, University of Illinois Chicago

Things I Wish I'd Known

Location: Orlando L

While there are many sources of great advice, it is often difficult to know how and when to apply that advice to one's own career. The panelists in this session discuss how they have, or have not, applied the advice they've gotten at various points in their computing careers. Audience members will be encouraged to reflect on and to share their experiences. Importantly, the panelists represent a diverse range of viewpoints from industry, from academia, from recent college graduates, and from mid-career professionals.

Panel Moderator: **Tzu-Yi Chen**, Pomona College

Panelists: **Amy Czizmar Dalal**, Carleton College; **Lucas Dos Santos**, Google; **Victor Garcia**, National Geographic, **Alana Shine**, USC

Mixing Real and Virtual in WebXR: Augmented and Mixed Reality for Everyone

Location: Florida A

In this immersive and interactive session you will learn about Virtual & Mixed Reality and how Open Web Solves it. You will explore what and how to create an immersive experience that runs in your phone as well as devices like HTC Vive. What kind of experiences, visualizations you can build and tell your story in a immersive way. Finally, you will create your first Web Virtual Reality & Mixed Reality experience and see them.

Presenter: **Rabimba Karanjai**, Mozilla and Rice University

Building Your Resume for a Tech Career by Google and Pandora

Location: Florida B

Unsure of your resume or looking for guidance in developing it? Come learn resume prep tips and tricks from Google and Pandora recruiters to help you prepare for your future technical career. Don't forget to bring a copy of your resume to the session as this is an interactive opportunity to receive coaching on how to improve your resume.

Presenters: **Melissa Arguinzi**, Google; **Beti Gathegi**, Pandora

iAAMCS Guidelines for Successfully Mentoring Black/African-American Computing Sciences Ph.D. Students

Location: Florida C

The Institute for African-American Mentoring in the Computing Sciences (iAAMCS) developed guidelines to maximize successful strategies for mentoring Black/African-

FRIDAY PROGRAM SCHEDULE



American doctoral students in the Computing Sciences (CS). We define “student mentoring” as the process of supporting, encouraging, and overseeing students’ academic and social progress with the goal of facilitating career and personal development. Drawing from prior research on underrepresented students in CS and the role of mentoring, the following guidelines emerged: (1) recruit strategically, (2) establish community, (3) foster a research culture, (4) provide holistic advising, (5) provide funding, and (6) promote professional development. It is our hope that institutions, departments, and faculty use these guidelines to bolster the participation of Black/African-American students pursuing doctoral degrees in CS-related fields. Although the original formation of the iAAMCS Guidelines serves as best practices for mentoring Black/African-American students in computing, these strategies are useful in optimal mentoring of all students. Research on Black/African-Americans in CS suggests that implementation of the practices outlined in the guidelines will enable Black/African-American students to persist and graduate in CS Ph.D. programs across the US. Integral to the iAAMCS Guidelines is the assertion that inclusion is key to the success of Black/African-Americans in CS and that inclusion is the responsibility of all campus constituents. Using the “7 Barriers to STEM Disciplines and the Ph.D.” as a rubric, the following guidelines aim to mitigate the challenges Black/African-American students face in pursuit of a CS doctoral degree

Panel Moderator: **Jeremy A. M. Waisome**, University of Florida

Panelists: **Juan E. Gilbert**, University of Florida; **Jerlando F.L. Jackson**, University of Wisconsin-Madison; **Kyla McMullen**, University of Florida; **Monica H. Anderson**, University of Alabama

3:00 PM - 3:30 PM

Refreshment Break

Location: Plaza International Ballroom Foyer

3:30 PM - 4 :30 PM

Tech Talks

Sponsored by MIT Lincoln Labs and SAP

Location: Orlando N

Software Reverse Engineering with Panda

In a time where critical vulnerabilities are pervasive in most software, and millions of dollars are spent to understand and recover from malicious software, better reverse engineering

capabilities are clearly needed. Reverse engineering is a process where low-level details of code are disassembled, analyzed, and contextualized to understand how software executes, what software is capable of, and what potential vulnerabilities are present in the software. This process is often manual, consisting of static analysis and dynamic analysis. Static analysis occurs over an entire piece of code but is potentially hampered by obfuscation attempts designed deliberately to thwart this analysis. Dynamic analysis occurs by performing instrumentation on code while it runs, but often does not enable exploration of all code paths of interest. In this talk, we will discuss a unique solution to the current manual process, the Platform for Architecture-Neutral Dynamic Analysis (PANDA). PANDA is an open-source tool that has been built to enable a wide variety of dynamic software analysis techniques that can help answer complex questions about software. Key features include whole-system record and replay, and a modular plugin architecture. This talk will also include a demonstration of how static analysis, dynamic analysis, and record and replay can be combined in interesting ways to expedite the complex process of reverse engineering. PANDA has been released as open source software, and is currently available on Github (<https://github.com/panda-re/panda>).

Presenter: **Ryan Whelan**, MIT Lincoln Labs

The Inclusive Perspective and Purpose-driven Technologies: Making the World Run Better

SAP is heavily invested in IoT, AI/ML, Blockchain, Big Data Analytics and Cloud technologies for customers in 180 countries. SAP’s mission is to make the World run better and improve people’s lives. SAP aspires to be the most diverse software company in the world. Therefore, Interconnection between emerging technologies and inclusion of women and underrepresented minorities (URMs) is core to SAP’s mission. This talk will highlight SAP’s emphasis on emerging technologies and the relevance of a more diverse workforce.

Presenter: **Danny J. Allen**, SAP

Birds of a Feather Sessions

Learn About Open Source Software

Location: Orlando L

The meme “GitHub is the new resume” describes a modern expectation for competitiveness in tech coding jobs where GitHub serves as a repository for Free and Open Source Software (FOSS) projects. However, higher education



computer science departments have been slow to adapt their curriculum to include FOSS principles and skills. Come to this BoF with your questions about open source software. What skills and applications do you need to know? How do you select an FOSS project and then where do you start? Is coding the only way to be an FOSS contributor? Importantly, learn about activities that are diversifying FOSS such as EquitableTech workshops and paid internships from Outreachy and Google Summer of Code. We will also describe open source college classes that are being taught by faculty members of the POSSE and Humanitarian HFOSS communities.

BOF Organizers: **Alberto Roca**, Diverse Scholar; **Chris Murphy**, University of Pennsylvania

The Forgotten: Why Technology Education, Engagement, and Access for Girls in Rural Communities is Crucial for the Future

Location: Florida A

Girls in rural communities are often left out of the conversation when it comes to careers in tech. There are several ways to have an impact and expose girls to what is going on in the industry. Hear from two technology professionals who have given back in rural areas; as well as, two STEM educators who work in rural communities, on ways to increase your impact on students in these areas.

BOF Organizers: **Khalia Braswell**, INTech Foundation, Inc; **Aundrea Caldwell**, Cool STEM Kids; **Priscilla Sloan**, Greer Middle School; **Sheronica Braswell Sharp**, Nash Rocky Mount Schools

Computing and Values

Location: Florida B

Current advances in technology are inviting, perhaps necessitating, conversations about ethics and values in computing. Social Media platforms are re-thinking the conversations that they should encourage or even allow. The ACM is in its final stages of updating its Code of Ethics. Top universities are rushing to add courses in the Ethics of Computing to their curriculum. But what are ethics? How are they different from values and morals? Why does it matter? Understanding one's values, what one is passionate about, along with the values of others, is essential to building a computing community that can work together for mutual benefit. These discoveries can create a framework for future decision-making, both personal and corporate. This BoF aims to help attendees explore their personal core values and how

those values would influence their view of ethics in computing and the kind of future work in which they wish to become involved.

BOF Organizer: **Renee Fall**, University of Massachusetts-Amherst; **Lori Carter**, Point Loma Nazarene University

Radical Transparency: Centering Social Justice in Computer Science for All

Location: Barrell Spring

We have identified a slice of the population, underrepresented minorities, as those needing to be included in CS and are in need of interventions, some focused on increasing motivation and engagement. Why are participants in Computer Science Education research passive recipients of interventions? What if we make the theoretical frameworks and research methodology transparent to participants? What if the participants are invited/included in discussing the theoretical frameworks that might be applicable and are involved in designing the research? What if they are involved in the analysis of findings? What might this look like? This necessitates that we also make transparent the history and context of computer science as a field/discipline, and computer science education as an extension of the historical, sociocultural context in which it operates.

One specific area of research methodology that I would like to discuss/explore more deeply and test for applicability is Youth Action Participation Research.

BOF Organizer: **Makseem Skorodinsky**, University of Oregon

4:30 PM-5:30 PM

Tech Talk

Xbox Avatars: The Art of Expressing Yourself with Technology

Sponsored by Microsoft

Location: Orlando N

As Xbox Avatars approach general availability, we'll share the vision, design and technical work that makes our Avatars expressive, creative and inclusive. We'll talk about some aspects of our Avatar system that allow the richness of customization, including design direction, engine architecture, seemingly infinite color options, cloth and joint physics, limb replacement system, diverse body archetypes, mounts such as wheelchairs and our backwards compatibility mode.

Presenters: **Luis Augusto Angel Mex**, Microsoft; **Jingyi Zhang**, Microsoft

FRIDAY PROGRAM SCHEDULE

Birds of a Feather Sessions

The Ethics of Cyber Dating

Location: Orlando M

We will discuss the developer's responsibility when building web and mobile dating applications, debate what is fair use of dating profile information, and discuss how the laws regarding online dating could be improved. Some topics we might cover are the precautions developers should take to safeguard users' personal information as well as how far they should go to verify their users' identities are legitimate. We will also discuss what are reasonable expectations for users' privacy. Their accounts are public, but contain sensitive information. Can their data fairly be used by researchers? Are researchers obligated to get informed consent?

BOF Organizer: **Rebecca C. Krieger**, California Polytechnic State University, San Luis Obispo

What is a Computer Science Student Advisory Council and Why is it Needed?

Location: Orlando L

The session will start with an introduction of reasons why student advisory councils are needed, particularly in the field of computer science. Then, the workshop will move into three main parts: 1) how to propose this council to advisors and faculty, 2) how to recruit student members and lead an effective team, 3) how to listen to your constituents and put on programs that fill student needs.

The introduction will start with a preview highlighting the lack of minorities and underrepresented groups in computer science departments throughout the country. We want to draw attention to the fact that even in departments with underrepresented students, the curriculum and experience are not built to meet their needs. We wish to ask students questions; Are the departments doing enough to support the success of these individuals? We hope students will start to think about what they need most to ensure their success.

BOF Organizer: **Nicole Riley**, University of Washington

Social Responsibility and Ethics in Artificial Intelligence and Extended Reality

Location: Florida A

Social responsibility exists at the periphery of the tech industry, starting with limited ethics classes in CS curricula and later codified in engineering practices and company culture. This Birds of Feather will bring together software engineers, data scientists, product managers AI researchers,

and policy specialists to discuss the societal impacts of what we build and how we build it. We will touch on different case studies from industry, academia, and policy regarding ethics and social responsibility in engineering. We will discuss past and current conflicts between technology and ethical considerations, and how to identify and navigate current challenges in this arena. As technologists, we sometimes try to fix a world in which we do not fully understand. We approach problems that we are not experts in, craft a solution, then unleash it for testing without a full understanding of what could go systemically go wrong when experimenting at scale. As ethics and engineering are in an increasingly multi-disciplinary realm, we will begin by establishing a shared understanding of what ethics and social responsibility mean in relation to technology. We will discuss how can work within our own organizations to drive awareness around fairness, privacy, accountability, and policy.

BOF Organizer: **Niveditha Kalavakonda**, University of Washington

Open Source: How to Earn Money or Build a Portfolio from Home!

Location: Florida B

Anyone can join open source! No one needs a computing degree to qualify as an open source contributor. There are over 200 organizations that develop products in public GitHub repositories. Unfortunately, in most of these organizations, you will see 98% contributors who identify as male and 75% who are located in North America and Europe. However, this isn't the case for everyone! Systems Open Source consists of 12% contributors who identify as Male. Our slack group has over 800 members, about 20 different time zones, and includes members from Cameroon, Brazil, and India. We have a culturally inclusive development environment. In addition to our membership, we have 7 projects in development with Peace Corps and 6 projects dedicated to the Systems community. Some are on Web, Android, and iOS platforms, whereas others are only mobile or only web applications. These products get designed, coded, and tested in open source programs such as Google Summer of Code, Google Code-in, and Outreachy all year round. Participants have a full-stack developer experience with Google Summer of Code. Outreachy interns get paid \$5500 USD to document or design game graphics from the comfort of their home! In this session, we will cover three main topics: an overview of open source programs, how to become a member of an open source organization, and how to use these experiences as part of your professional portfolio.

BOF Organizer: **Maybellin S. Burgos**, Anita Borg Institute



Embracing Diversity in Experiences

Location: Florida C

Often we focus on diversity in terms of a person's ethnicity, color, or sex. But diversity goes much farther than that. There is diversity in our thought-process and diversity in our experiences. In a technical field, the general career path is relatively standard: specialize in a major that will best prepare you for after college, get an internship (or two) in the same field, and then get a job. But there are a lot of people who come to their career from completely different areas, and navigating that process is something that isn't talked about often. Regardless of the professional background of a person, the end goal of supporting each other and fostering growth in a position remains the same. It's time to talk about how best we can do that.

BOF Organizer: **Lenna A. Nashif**, TIAA

Community Engagement and Service Learning in Computer Science Education

Location: Manatee Spring

In this birds-of-a-feather session, faculty and students will share their experiences, successes, and challenges with community engagement (CE) and service learning (SL) in computer science education. Both CE and SL are valuable high-impact practices, because they expose students (and instructors) to complex, challenging situations that transcend normal classroom activities. Through interactions with members of the community, students are forced to acknowledge their own beliefs and biases, and strengthen new skills, including interdisciplinary thinking and teamwork. Computer science, unlike many other disciplines, does not have a strong tradition of CE/SL pedagogy, with the possible exception of software engineering courses that sometimes include work with external partners. However, the ubiquity of digital technology in modern life has created new service opportunities for college and university computer science programs. The exact agenda will be determined by the interests of participants, but possible topics include: - Designing courses: setting learning goals, finding community partners - Challenges of CE/SL: confronting uncomfortable situations, managing differences, dealing with unexpected events - Combining teaching, research, and service - Opportunities for community engagement in particular

courses: where does CE best fit in the computer science curriculum?

BOF Organizer: **Dan S. Myers**, Rollins College

5:00 PM - 6:00 PM

VIP Reception

By invitation only

Location: Orchid

6:00 PM - 11:00 PM

Tapia Conference Banquet

Location: Regency O-R

2018 Banquet Keynote Speaker

Shirley Malcom, Head of Education and Human Resources Programs at AAAS

BIOGRAPHY:

Shirley Malcom is head of Education and Human Resources Programs at AAAS. She works to improve the quality and increase access to education and careers in STEM fields as well as to enhance public science literacy. Dr. Malcom is a trustee of Caltech and a regent of Morgan State University, and a member of the SUNY Research Council. She is a former member of the National Science Board, the policymaking body of the National Science Foundation, and served on President Clinton's Committee of Advisors on Science and Technology. Malcom, a native of Birmingham, Alabama, received her PhD in ecology from The Pennsylvania State University, masters in zoology from UCLA and bachelor's with distinction in zoology from the University of Washington. She holds 16 honorary degrees.

Malcom serves on the boards of the Heinz Endowments, Public Agenda, the National Math-Science Initiative and Digital Promise. Internationally, she is a leader in efforts to improve access of girls and women to education and careers in science and engineering and to increase use of S&T to empower women and address problems they face in their daily lives, serving as co-chair of the Gender Advisory Board of the UN Commission on S&T for Development and Gender InSITE, a global campaign to deploy S&T to help improve the lives and status of girls and women. In 2003, Dr. Malcom received the Public Welfare Medal of the National Academy of Sciences, the highest award given by the Academy.

SATURDAY PROGRAM SCHEDULE



POST CONFERENCE ACTIVITIES

8:00 AM - 12:00 PM

Flip Alliance Meeting

By Invitation Only

Location: Orlando N

8:30 AM - 4:30 PM

BWiC Pathways to STEM Gaming Workshop for High School Students

Sponsored by Black Women in Computing (BWiC), CMD-IT, Microsoft, StrongTIES and Florida Interactive Entertainment Academy

Location: Florida Interactive Entertainment Academy

The Pathways to STEM workshop will consist of activities that expose families from historically under-served and underrepresented communities to the importance of careers in computer science. Parents will be provided information on how to keep their children on the path to college and a STEM career. Students will collaborate as a team to design a game to promote good cyber citizenship. Each team member must assume one of 3 roles: game developer, music composer, character artist. Workshop participants will learn how to use a range of rapid prototyping tools and programming techniques to create and showcase their game. The final deliverable will be a team presentation of their product.

STARS Celebration

Pre-Registration Required

Location: Plaza F Schedule

The 14th annual STARS Celebration is a full-day event for college students and faculty who are interested in becoming change agents that take action to broaden participation in computing. The conference program features sessions on best practices in broadening participation in computing, hands-on training workshops for conducting computer science outreach programs for K-12 students, professional development sessions for both faculty and students, and a student poster session highlighting computing research, outreach, and service projects. The STARS Celebration conference also serves to build and sustain the STARS Computing Corps (STARS) community. STARS is an NSF-funded alliance of more than 50 colleges and universities with a mission to develop college students and faculty as leaders who broaden participation women, underrepresented minorities, and persons with disabilities in computing. STARS student members take an active role in broadening participation in computing and develop their technical skills by leading service learning projects, including near-peer outreach that introduces K-12 students to computing as well as within-department peer tutoring, mentoring, and research collaborations. Since 2006, over 2600 STARS students and 80 faculty across 53 academic institutions have reached more than 140,000 K-12 students in STARS outreach programs.

CONFERENCE ORGANIZATION

2018 Tapia Conference

The 2018 ACM Richard Tapia Celebration of Diversity in Computing Conference is possible because of the tremendous dedication and contributions of many organizations and volunteers from the computing community. We very much appreciate the significant support, time, and excellent input. We extend a sincere thank you to everyone, including our attendees, for making this conference possible.

SPONSOR

The Association for Computing Machinery (ACM)

www.acm.org

Founded in 1947, ACM is a major force in advancing the skills of information technology professionals and students worldwide. Today, over 80,000 members and the public turn to ACM for the industry's leading Portal to Computing Literature, authoritative publications and pioneering conferences, providing leadership for the 21st century.

PRESENTER

Center for Minorities and People with Disabilities in Information Technology (CMD-IT)

www.cmd-it.org

The Center for Minorities and People with Disabilities in Information Technology (CMD-IT) is a non-profit organization with a vision to contribute to the national need for an effective workforce in computing and IT through synergistic activities related to minorities and people with disabilities. The vision is realized through the mission to ensure that under-represented groups are fully engaged in computing and information technologies, and to promote innovation that enriches, enhances, and enables these communities, such that more equitable and sustainable contributions are possible by all communities. CMD-IT's projects are focused on professional development, community enrichment, and curriculum development.

TAPIA 2018 COMMITTEES



Tao Xie



Joel Branch



Robert Parke



Stephanie Rodriguez



Christan Grant



Alvitta Ottley



Patricia Garcia



Jasmine Jones



Michael Spear



Jorge Ortiz



Kemafor
Anyanwu Ogan



Vetria Byrd

Conference General Chair

Tao Xie, University of Illinois at Urbana
Champaign

Conference Program Chair

Joel Branch, Lucid Inc.

Committee Co-Chairs

Birds of a Feather

Robert Parke, USC
Stephanie Rodriguez, Afterschool Alliance

Doctoral Consortium

Christan Grant, University of Oklahoma
Alvitta Ottley, Washington University in St.
Louis

Panels & Workshops

Patricia Garcia, University of Michigan
Jasmine Jones, University of Minnesota-Twin
Cities

Student Posters/ ACM Student Research Competition

Michael Spear, Lehigh University
Jorge Ortiz, IBM T.J. Watson Research
Center

Scholarships

Kemafor Anyanwu Ogan, NC State
University
Vetria Byrd, Purdue University

Tapia Steering Committee

Dorian Arnold, Emory University
Brian Blake, Drexel University
Joel Branch, Lucid
Jamika D. Burge, Capital One
Kimberly McLeod, CMD-IT/University of
Chicago
David Patterson, Google
Richard Tapia, Rice University
Valerie Taylor, CMD-IT/University of Chicago

Elaine Weyuker, ACM

Tao Xie, University of Illinois at Urbana
Champaign

Infrastructure Committee

Valerie Taylor, CMD-IT/University of Chicago
Tao Xie, University of Illinois at Urbana
Champaign
Joel Branch, Lucid, Inc.
Kimberly McLeod, CMD-IT/University of
Chicago
Kenya Williams, CMD-IT/University of
Chicago
Jerri Barrett, CMD-IT

Panels & Workshops Reviewers

Bushra Anjum, Amazon
Lisa Anthony, University of Florida
Seyram Avle, University of Michigan
Jasmine Berry
Raheem A Beyah, Georgia Institute of
Technology
Robin N. Brewer, University of Michigan,
Ann Arbor
Lauren Bricker, University of Washington
Edward Castillo, William Beaumont Hospital
Research Institute
R. Jordan Crouser, Smith College
Nicole Cuellar, Uber
Robert DeLoatch Apple, UIUC
William Easley, University of Maryland,
Baltimore County
Gabriel Escontrias, Arizona State University
Jannie Fernandez, NCWIT
Cecilia Fernandez, University of Michigan,
Ann Arbor
Rakia Finley, FIN Digital, Surge Assembly
Patricia Garcia, University of Michigan
Jason Grant, Middlebury College
Alvin Grissom, Ursinus College
Stephan Guy, University of Minnesota
Julie Hui, University of Michigan

Amy Hurst, University of Maryland,
Baltimore County

Ashley Jackson, University of Michigan
Laura Ann Jacobs, University of Michigan
Jasmine Jones, University of Michigan,
University of Minnesota
Shaun Kane, University of Colorado at
Boulder

Keith O'Hara, Bard College

Ihudiya Finda Ogburu, University of
Michigan

Tiffany Price, Kapor Center for Social Impact
Nikki Roda, Deduce Designs
Kehontas Rowe, Capitol Technology
University

Jean Ryoo, UCLA Graduate School of
Education

Maarten Sap, University of Washington

Juan Sequeda, Capsenta Labs

Sharon Torres, Arizona State University

Nanette Veilleux, Simmons College

Sabrina Weiss, Arizona State University,
Center for Gender Equity in Science and
Technology

Michele Williams, University of Maryland,
Baltimore County

Ryoko Yamaguchi, Plus Alpha Research &
Consulting, University of North Carolina
Greensboro

Birds of a Feather Reviewers

Elisabeth A. Baseman, Los Alamos National
Laboratory
Tony Baylis, Lawrence Livermore National
Laboratory
Cristina Beldica, Intel Corporation
Carolyn Bell, Fidelity Investments
Jose F. Candelaria Soberal, University of Puer
Tzu-Yi Chen, Pomona College
Luis Colmenares, SAP America
Kenneth Craft, Intel
Alfredo Cruz, Polytechnic University of
Puerto Rico

TAPIA 2018 COMMITTEES

Lisa Currin, Carnegie Mellon University - Information Networking Institute
Lien Diaz, Georgia Institute of Technology
Joy Dixon, Mosaic Presence
Latorre-Navarro Edward, University of Puerto Rico in Arecibo
Jannie Fernandez, NCWIT
Eric Fouh, Lehigh University
Rosalia Gomez, Texas Advanced Computer Center (TACC)
Khalil Griffin, Google
Kevin Griffin, Lawrence Livermore National Laboratory
Jarilyn Hernandez, West Virginia University
Patricia Lee, University of California Irvine
Keith O'Hara, Bard College
Francisco Raul Ortega, Florida International University
Rob Parke, USC
Meg Pirrung, Pacific Northwest National Lab
Stephanie Rodriguez, Afterschool Alliance
Solomon Russell, El Camino College
Joseph Sefair, Microsoft
Chinma Uche, Academy of Aerospace and Engineering
Zaira O. Vallenilla Marte
Verónica G. Vergara Larrea, Oak Ridge National Laboratory
Raul Viera, Lawrence Livermore National Laboratory

Student Poster Reviewers

Cait Crawford, IBM
Luke D'Alessandro, University of Washington
Rodrigo Fonseca, Brown University
Eric Fouh, Lehigh University
Jorge Ortiz, IBM Research
Wenjia Ruan, Apple
Michael Spear, Lehigh University
Jay Taneja, University of Massachusetts, Amherst
Robert Utterback, Monmouth College
Marco Zuniga

Doctoral Consortium Reviewers

Corey E. Baker, University of Kentucky
Damian Clarke, South Carolina State University
Shaun Gittens, ClearEdge IT Solutions
Christan Grant, University of Oklahoma
Shiree Hughes, Motorola
Ronald Metoyer, University of Notre Dame

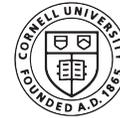
Steve Oney, University of Michigan
Alvitta Ottley, Washington University in St. Louis
Aubrey Rembert, Pandora
Beth Trushkowsky, Harvey Mudd
Deborah Trytten, University of Oklahoma

Scholarship Reviewers

Mihye Ahn, University of Nevada Reno
Rosa Banuelos, Baylor College of Medicine
Lina Battestilli, North Carolina State University
Tony Baylis, Lawrence Livermore National Laboratory
Christina Boucher, University of Florida
Joel Branch, ESPN
Vetria Byrd, Purdue Polytechnic Institute
Russell Carden, KIBO
Suryadip Chakraborty, University of Cincinnati
Erneest Cross, Lockheed Martin
Alfredo Cruz, Polytechnic University of Puerto Rico
Dilma Da Silva, Texas A&M University
Shelby Solomon Darnell, IBM Research
Marguerite Doman, Winthrop University
Sheena Erete,
Andres Figueroa, University of Texas Rio Grande Valley
Sherri Frizell, Prairie View A&M University
Christina Gardner-McCune, University of Florida
Natalie Gil, MIT Sloan
Rosalia Gomez, Texas Advanced Computer Center (TACC)
Kinnis Gosha, Morehouse College
Katharine Gurski, Howard University
Robert Holder, University of Maryland, Baltimore County
Sheila Humphreys, UC Berkeley EECS
Afra J., Mashhadi, Bell Labs
Monica Jackson, American University
Luza Jaramillo, Electronic Arts
Hyung Won Kim, University of Texas Rio Grande Valley
James Morris King, US Army Research Laboratory
Rubin Landau, Oregon State University
Hwajung Lee, Radford University
Patty Lopez, Intel
Robert Lychev, MIT Lincoln Laboratory
Yashema C. Mack, National Institute for Computational Sciences / University of Tennessee

Roummel Marcia, University of California, Merced
Susan Margulies, USNA
Brandeis Marshall, Spelman College
Talea Mayo, University of Central Florida
Carlos Monroy, Rice University - Digital Learning and Scholarship
Rod Moten, I4HQ, LLC
Aarti Munjal, TestPlant
Jaye Nias, Spelman College, 1974
Kemafor Ogan, North Carolina State Univ
Kemafor Ogan, North Carolina State Univ
Tamer Oraby, University of Texas Rio Grande Valley
Francisco Raul Ortega, Florida International University
Jorge Ortiz, IBM Research
Oyewole Oyekoya, Clemson University
Phillip D. Palmer, Duquesne University
Joanna Papakonstantinou, Episcopal High School
Tiffany Reardon, UC Berkeley EECS
Brad Reaves, North Carolina State University
Samuel A. Rebelsky, Grinnell College
Timothy Redl, University of Houston-Downtown
Juan Restrepo, Oregon State University
Rose Robinson, Anita Borg Institute
Sami Rollins, University of San Francisco
Mugizi Rwebangira, Howard University
Saeedeh Shekarpour, Dayton University
Valerie Taylor, CMD-IT
Jesse Turner, Rice University
Lydell Tyson
Leticia Velasquez, Rice University
Pamela Willians, LMI
Tao Xie, University of Illinois at Urbana-Champaign
Kamuela Yong, Arizona State University

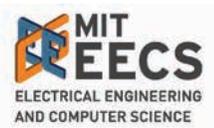
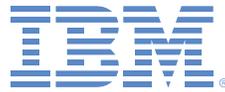
PLATINUM SUPPORTERS



PLATINUM GOVERNMENT PARTICIPANT



GOLD SUPPORTERS



GOLD GOVERNMENT PARTICIPANTS



BERKELEY LAB

**Lawrence Livermore
National Laboratory**

**Los Alamos
National Laboratory**



OAK RIDGE NATIONAL LABORATORY



Sandia National Lab

SILVER SUPPORTERS



GitHub



JPMORGAN CHASE & Co.



Department of
Computer Science
COLLEGE OF SCIENCE



SILVER GOVERNMENT PARTICIPANT



BRONZE SUPPORTERS

AccessComputing
 ACM's Women in Computing
 Adobe
 Affirm
 AirBnB
 Asana
 BlackRock
 Bloomberg
 California State Polytechnic
 University, Pomona
 Chain
 Cisco Systems, Inc
 Code2040
 Computing Research Association
 Coursera
 Dolby Laboratories
 eBay
 EDEFI Research Team at Vanderbilt
 University
 Emory University
 Equitable Tech
 Facebook

Fast Enterprises
 Florida State University School of
 Information
 Goldman Sachs
 Grinnell College
 Harvey Mudd College
 Indiana University School of
 Information
 Jopwell
 Lyft
 MetLife
 NCWIT
 NSF Graduate Research Fellowship
 Program
 Oscar Health
 Outreachy
 Paul G. Allen School of Computer
 Science and Engineering University
 of Washington
 Princeton University
 Qualcomm
 Quora

SRI International
 St. Mary's College of Maryland
 The Aerospace Corporation
 The University of Southern California
 UC Berkeley School of Information
 University of California, Irvine
 University of California, Santa Cruz
 University of Kansas
 University of Kentucky School of
 Information Science
 University of Maryland, Baltimore
 County Center
 University of Massachusetts,
 Amherst College of Information
 and Computer Science
 University of North Texas
 University of Notre Dame
 University of Oklahoma
 University of San Francisco
 University of San Francisco MS in
 Data Science
 Xsede

CONTRIBUTOR

Square

ADDITIONAL SUPPORTERS

2018 STUDENT PROFESSIONAL DEVELOPMENT WORKSHOP SUPPORTER



2018 HISPANICS IN COMPUTING RECEPTION



STUDENT LUNCHEON SPONSOR



TAPIA 2018 APP SPONSOR



TAPIA 2018 SNAPCHAT GEOFILTER



2018 MEDIA

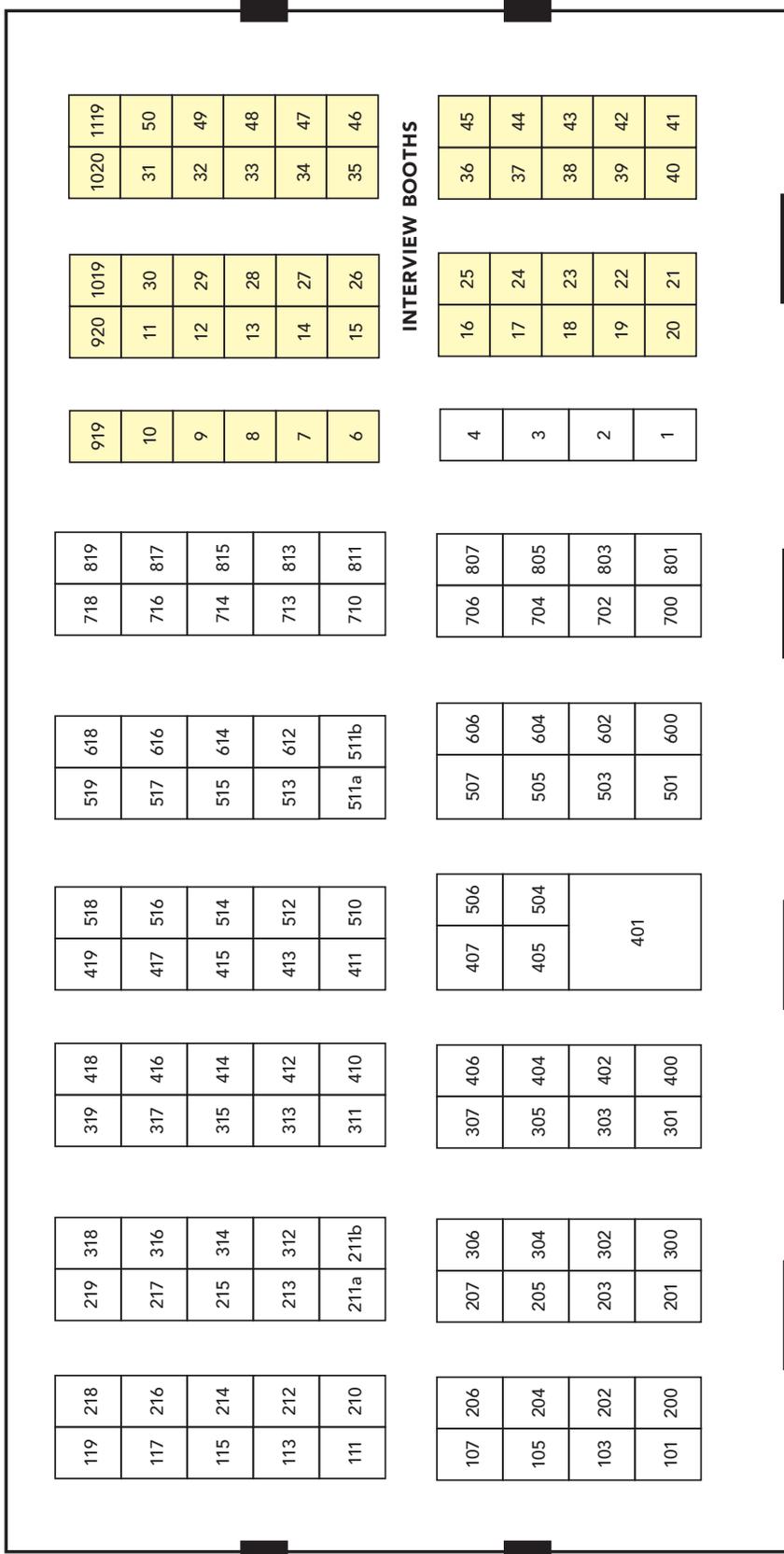


TAPIA 2018 EXHIBITORS

Tapia 2018 Exhibitors	Booth Number	Tapia 2018 Exhibitors	Booth Number
AccessComputing	614	Massachusetts Institute of Technology	201
ACM-W	516	MetLife	115
Adobe	811	Microsoft	401
Affirm, Inc.	512	MIT Lincoln Laboratory	407
Airbnb	718	Mozilla	402
AnitaB.org	504	National Center for Atmospheric Research	510
Argonne National Laboratory	302	National Center for Women & IT (NCWIT)	219
Asana	612	National Institute of Standards and Technology	2
Bank of New York Mellon	411	Nike	103
BlackRock, Inc	513	North Carolina State University	600
Bloomberg LP	213	NSF Graduate Research Fellowship Program	319
Brookhaven National Laboratory	606	Oak Ridge National Laboratory	602
Brown University	515	Oscar Health	107
California State Polytechnic University, Pomona	A	Outreachy	416
Caltech	404	Pacific Northwest National Laboratory	306
Capital One	706	Pennsylvania State University	413
Carnegie Mellon University	305	Pennsylvania State University Applied Research Laboratory	511b
Chain	714	Princeton University	511a
Cisco Systems, Inc.	415	Purdue University	412
CMD-IT	503	Qualcomm	111
Code2040	218	Quora	217
Computing Research Association	519	Rice University	604
Cornell University	301	Salesforce	200
Counsyl	803	Sandia National Laboratory	101
Coursera	616	SAP	3
Dolby Laboratories	316	SRI International	819
Drexel University	313	St. Mary's College of Maryland	419
eBay	214	Stanford University	300
EDEFI Research Team at Vanderbilt University	518	Texas A&M University	4
Emory University, Laney Graduate School	211b	The Aerospace Corporation	517
Facebook	710	Two Sigma Investments	501
FAST Enterprises, LLC	414	Uber	410
Fermi National Accelerator Laboratory	1	UC Berkeley School of Information	716
Fidelity Investments	807	University of California, Berkeley	700
Florida State University School of Information	418	University of California, Irvine	211a
Georgia Tech College of Computing	400	University of California, San Diego	801
GitHub	203	University of California, Santa Cruz	216
Goldman Sachs	312	University of Illinois	805
Google	507	University of Kansas	618
Grinnell College	318	University of Kentucky School of Information Science	317
Harvard University	206	University of Maryland, Baltimore County	417
Harvey Mudd College	514	University of Massachusetts, Amherst	117
IBM	505	University of Michigan	304
Indiana University	815	University of North Texas	314
Institute for African-American Mentoring in Computing Sciences (IAAMCS)	105	University of Notre Dame	113
Johns Hopkins University Applied Physics Laboratory (APL)	202	University of Oklahoma	215
Jopwell	210	University of San Francisco	712
JPMorgan Chase & Co.	204	University of San Francisco MS in Data Science Program	817
Kennesaw State University	704	University of South Florida	506
Lawrence Berkeley National Lab	406	University of Southern California	205
Lawrence Livermore National Laboratory	303	University of Washington	212
LinkedIn	405	University of Washington	212
Los Alamos National Laboratory	307	Virginia Tech	702
Lyft	315	Wayfair	207
		XSEDE	813
		Zillow Group	311

EXHIBIT HALL MAP

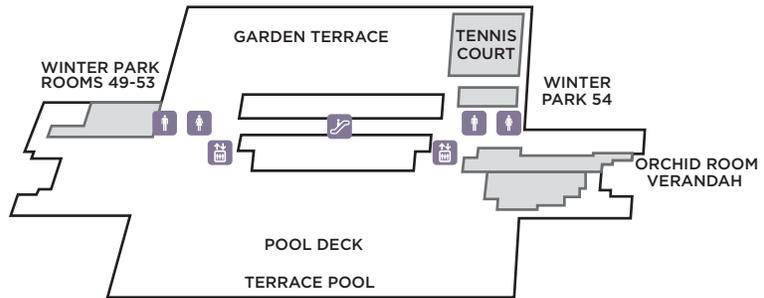
HYATT REGENCY ATLANTA – GRAND HALL EAST & WEST



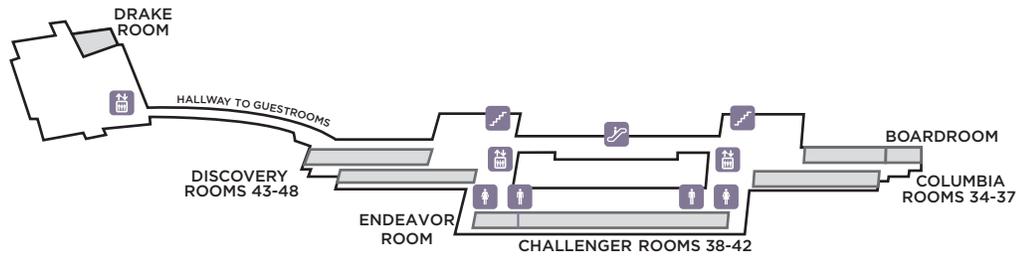
HYATT REGENCY ORLANDO - PLAZA INTERNATIONAL BALLROOM - ORLANDO, FLORIDA

SITE MAP: HYATT REGENCY

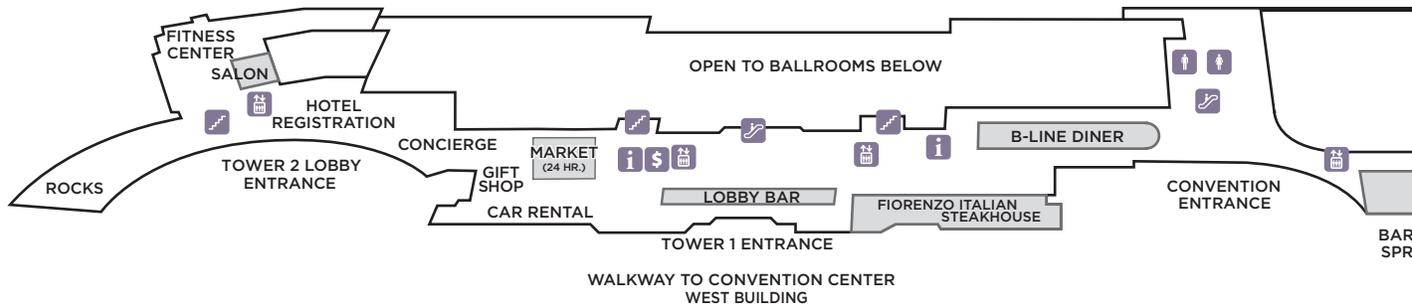
FLOOR 4



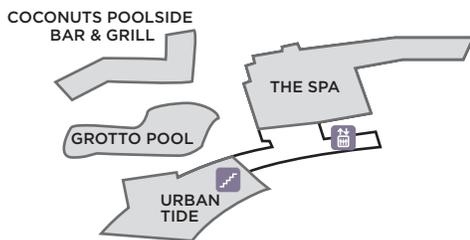
FLOOR 3



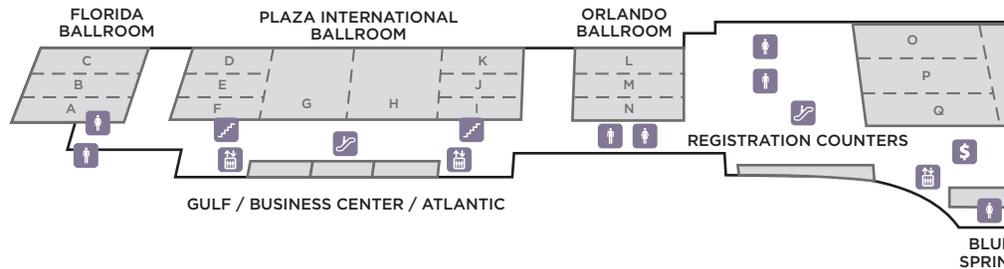
LOBBY



FLOOR 1

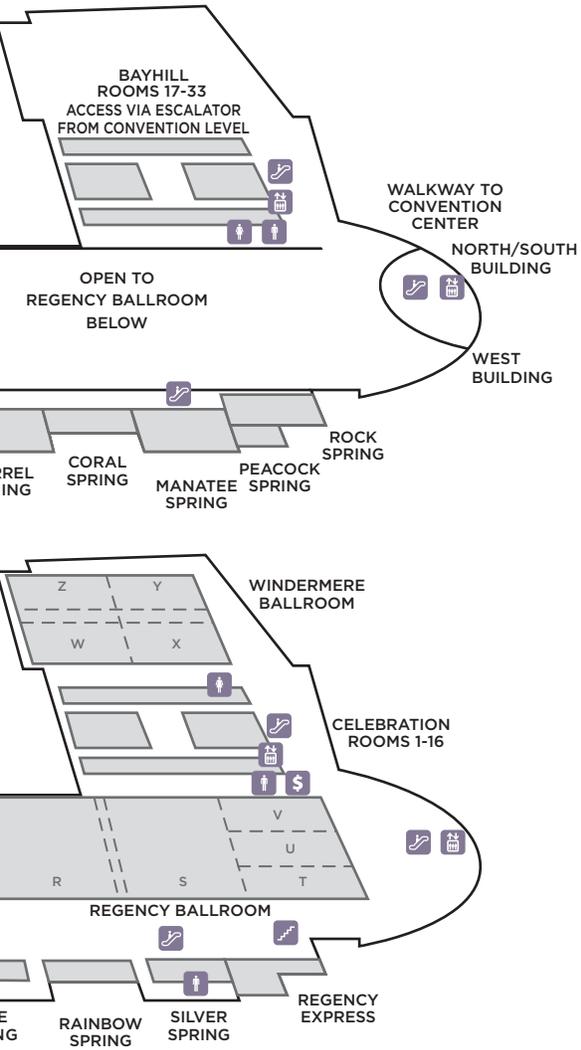


CONVENTION LEVEL



KEY

-  Restrooms
-  Escalator
-  Stairway
-  Elevator
-  Information
-  ATM



HYATT REGENCY Orlando

9801 International Dr. Orlando, FL 32819

T: +1 407 284 1234 F: +1 407 309 5676

orlando.regency.hyatt.com

LIKE us at [Facebook.com/HyattRegencyOrlando](https://www.facebook.com/HyattRegencyOrlando)
or follow @HyattOrlando on Twitter for hotel info and offers.



EXCEL ***INNOVATE*** ***LEAD***

on the Cornell campus
or in New York City



CORNELL COMPUTING AND INFORMATION SCIENCE (CIS) GRADUATE DEGREES

Master (MEng) in Computer Science
Master (MS) in Computer Science
PhD program in Computer Science

Master (MPS) in Information Science
PhD program in Information Science

Master (MPS) in Statistical Science
PhD program in Statistical Science

CORNELL TECH GRADUATE DEGREES

Master (MEng) in Computer Science

Master (MEng) in Operations Research and Information Engineering

Master (MEng) in Electrical and Computer Engineering

PhD program in Computer Science

Johnson Cornell Tech MBA

Master of Laws (LLM) in Law, Technology and Entrepreneurship

Technion-Cornell Dual Master's Degrees (MS) in Connective Media

Technion-Cornell Dual Master's Degrees (MS) in Health Tech



Cornell CIS
COMPUTING AND INFORMATION SCIENCE



**CORNELL
TECH**



Your dream job could be helping millions find theirs

We're on a mission to connect every member of the global workforce with economic opportunity. Here's your chance to make a huge impact on how the world works, while transforming your own career.

studentcareers.linkedin.com

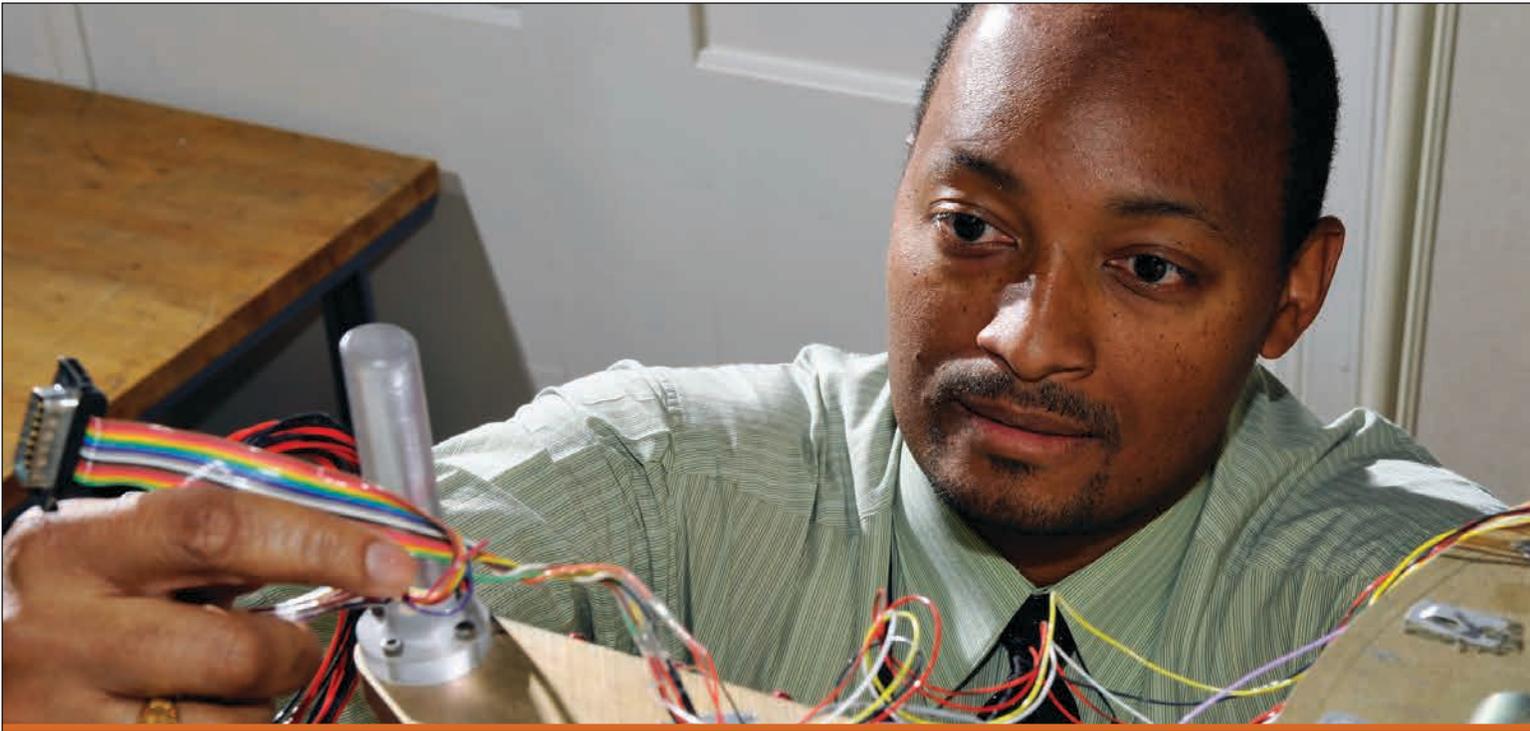
Linked in™



The time
is **now**

#MicrosoftLife
careers.microsoft.com





MIT LINCOLN

■ Create, Prototype, Deliver.

Since 1951, when MIT Lincoln Laboratory was established to build the nation's first air defense system, the Laboratory has been applying advanced technology to problems critical to national security.

In addition to an impressive record of technical innovation in communications, space surveillance, advanced electronics, and air and missile defense, today the Laboratory is also leading the way in newer areas such as cyber security, integrated sensing and decision support and homeland protection.

Behind every Laboratory solution are researchers with exceptional technical abilities and imagination, developing systems from the initial concept stage, through simulation and analysis, to design and prototyping, and finally to real world demonstrations. Cross-disciplinary collaboration and the breadth of Lincoln Laboratory's research enable continuous technical growth for its scientists – and they also inspire unparalleled creativity. In the past six years, MIT Lincoln Laboratory has been awarded 26 R&D 100 Awards that recognize the year's 100 most significant innovations in technology.

 **LINCOLN LABORATORY**
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
244 Wood Street, Lexington, MA 02420-9108



LABORATORY

Aerospace or Mechanical Engineering Cyber Security
Algorithm Development Digital Signal Processing
Applied Math Electrical Engineering
Circuit Design and Laser Development Machine Learning and Computer Vision
Computer Engineering Modeling and Systems Architecture
Computer Science and SW Engineering Physics

All positions are located in Lexington, MA. www.ll.mit.edu/employment

Please visit our recruiting booth during the Tapia Career Fair

Wednesday, September 19 – 7:30 p.m. – 9:30 p.m.

Thursday, September 20 – 11:00 a.m. – 6:00 p.m.

Friday, September 21 – 10:30 a.m. – 5:00 p.m.

MIT Lincoln Laboratory is an Equal Employment Opportunity (EEO) employer. All qualified applicants will receive consideration for employment and will not be discriminated against on the basis of race, color, religion, sex, sexual orientation, gender identity, national origin, age, veteran status, disability status, or genetic information. Due to the unique nature of our work, we require U.S citizenship.



We want to be known as the champions for a healthy Internet. An Internet where we are all free to explore, discover, create, and innovate without barriers or limitations. Where power is in the hands of many, not held by few. An Internet where our safety and identity are respected.

Today, we believe these principles matter more than ever. As a not-for-profit organization, we're uniquely able to build products, technologies, and programs that keep the Internet growing and healthy, with individuals informed and in control of their online lives.





Join us!

Careers Page: <https://careers.mozilla.org>

Twitter: @MozillaCareers

University Team Questions: university@mozilla.com

Learn more!

Mozilla Blog: <https://blog.mozilla.org>

Our Commitment to Inclusion: <https://blog.mozilla.org/inclusion>

Twitter: @Mozilla



**NC STATE
UNIVERSITY**

Computer Science

**WORLD CLASS
COMPUTER
SCIENCE
EDUCATION.**

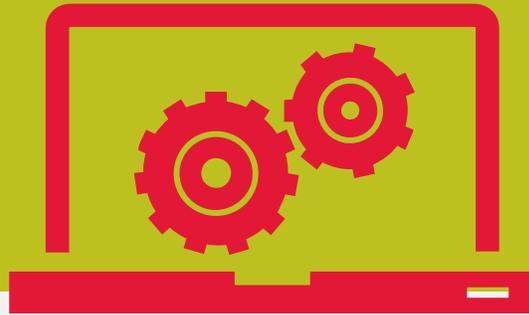


The **Department of Computer Science** at North Carolina State University is a global leader in computer science teaching, research and extension and is dedicated to increasing participation in the field to members of underrepresented groups.

According to data from the American Society for Engineering Education in 2014-15, **NC State ranked first in the nation in the number of female tenure-track / tenured faculty members** in departments of computer science in colleges of engineering. Undergraduate **female enrollment in the department is up 55 percent** in the last decade.

FOR EVERYONE.

OUR HIGHLIGHTS



- **25 percent** of our Ph.D. students are **women**.
- **89 percent** of full-time Ph.D. students are **fully funded**.
- NC State ranks **13th** on a list of **top suppliers of talent to Silicon Valley** companies and seventh among schools that are not located in California.
- The department ranks in the **top 10 among Most Affordable Online Master's in Computer Science Degrees**.
- The **median salary** for our master's graduates is **\$110,000**.
- **Within one year of graduation:**
 - **38 percent** of our Ph.D. graduates were working in **academic** institutions
 - **48 percent** were working in **industry**
 - **14 percent** were employed by a **government** agency
 - **All were gainfully employed** in their discipline.



We are Two Sigma

We find connections in all the world's data. These insights guide investment strategies that support retirements, fund research, advance education and benefit philanthropic initiatives. So, if harnessing the power of math, data and technology to help people is something that excites you, let's connect.

→ Visit us at www.twosigma.com/careers to learn more and apply.

What does the name mean?

Sigma is the 18th letter of the ancient Greek alphabet. The lower case (σ) and upper case (Σ) versions each has a different meaning when used in modern math and finance:

- σ The volatility of an investment's return compared to a benchmark
- Σ The sum

Adding up (Σ) the volatility (σ) of individual positions compared to a benchmark (i.e., Two Sigma) lets us amplify the signal we can get from our analysis.



NEW YORK | HOUSTON | LONDON | HONG KONG | TOKYO



 @twosigmacareers

 [linkedin.com/company/two-sigma-investments](https://www.linkedin.com/company/two-sigma-investments)

 @twosigmacareers

The background of the slide is a photograph of Sather Tower at the University of California, Berkeley, taken at dusk. The tower is illuminated from within, and the sky is a mix of purple, blue, and orange. The city lights and the bay are visible in the distance.

Berkeley | EECS

ELECTRICAL ENGINEERING & COMPUTER SCIENCES

3,000+ Undergraduate Majors

600+ Ph.D Students

21 Research Areas

60 Labs and Centers

6 Turing Award Winners

880 Alumni-Founded Companies

One Place

Apply at

eecs.berkeley.edu/academics/graduate

Artificial Intelligence, Computer Architecture & Engineering, Biosystems & Computational Biology, Control, Intelligent Systems and Robotics, Communications & Networking, Cyber-Physical Systems and Design Automation, Database Management System Design, Modeling and Analysis, Education, Energy, Graphics, Human Computer Interaction, Integrated Circuits, Micro/Nano Electro-Mechanical Systems, Operating Systems & Networking, Physical Electronics, Programming Systems Scientific Computing, Security, Signal Processing, Theory, Data Sciences



Brookhaven National Laboratory

Brookhaven National Laboratory offers world-class facilities and expertise to answer the most exciting, important questions in science—from the birth of our universe to the sustainable energy technologies of tomorrow. With seven Nobel Prize-winning discoveries, and celebrating over 70 years at the frontiers of scientific exploration, the Lab also has a strong history in the successful operation of large-scale computational science, data management, and analysis infrastructure. The expertise and tools developed at the Lab have been key factors in the success of the scientific programs at the Relativistic Heavy Ion Collider, National Synchrotron Light Source II, and the Center for Functional Nanomaterials—all U.S. Department of Energy Office of Science User Facilities—and also in biological, atmospheric, and energy research.



Brookhaven Lab is a multidisciplinary research institution operated by Brookhaven Science Associates for the U.S. Department of Energy.



Create
Design
Code
Build
for
everyone

We're proud to support the
ACM Richard Tapia Conference
as part of our commitment to
foster diversity and inclusion
at Google and beyond.
careers.google.com/students

IMPACTING the NEXT GENERATION of WOMEN in COMPUTING

Kennesaw State University's College of Computing and Software Engineering (CCSE) recognizes the value of diversity and is taking action to inspire young women and students of diverse backgrounds to enter the field of computing.

This summer, Kennesaw State's CCSE students and faculty are engaging the next generation of young girls who share a passion for technology. For example:

- Twelve members of the Object-Oriented Owls, a female computing organization at the KSU Marietta Campus, are volunteering their time at Girls Inc., a national organization that empowers girls to succeed.
- With support from Google's igniteCS initiative, a team of computer science students will be teaching young girls about programming to encourage them to pursue technology-focused careers.
- A Game Design Boot Camp offered through CCSE will teach young girls the concepts of game design and encourage pursuit in technology-focused fields.

We invite you to join us as a student or faculty member. We are actively seeking new students in our master's programs in CS, IT, and SWE and are hiring new faculty to support our growth. Find out more about our diversity and programs at:

CCSE.KENNESAW.EDU




College of Computing and
Software Engineering

LOS ALAMOS NATIONAL LAB



WE ARE

DELIVERING

Science
and Technology
That Promotes
World Stability



Learn more about our technology summer internships: www.isti.gov
www.lanl.gov/careers/career-options/student-internships



**MIT
EECS**
ELECTRICAL ENGINEERING
AND COMPUTER SCIENCE



**OUR GRADUATES
CHANGE THE WORLD.**

eecs.mit.edu



Massachusetts
Institute of
Technology

Careers @ NIST

Innovative,
real-world
research
ranging from
cybersecurity
to quantum
information

If you're looking for a **challenging** and **rewarding** career in science, technology, or engineering the National Institute of Standards and Technology (NIST) just might be the right place for you.

NIST has job opportunities in computer, math and engineering sciences and for students and postdoctoral researchers.

Careers and Internships in

- Computer Science
- Mathematics / Statistics
- Information Technology
- Engineering
- Bioscience
- Chemistry
- Materials Science
- Physics

Learn more about job opportunities and all of the great benefits NIST has to offer at www.nist.gov/careers

For current student opportunities within the Information Technology Laboratory (ITL), visit www.nist.gov/itl/pathways

NIST is a non-regulatory federal agency within the Department of Commerce. To learn more about NIST, follow us on YouTube, LinkedIn, Twitter, and Facebook.



“Every day provides me with a new set of challenges and the excitement of making contributions across a wide range of disciplines.”

Ramki Kannan
Computer Scientist



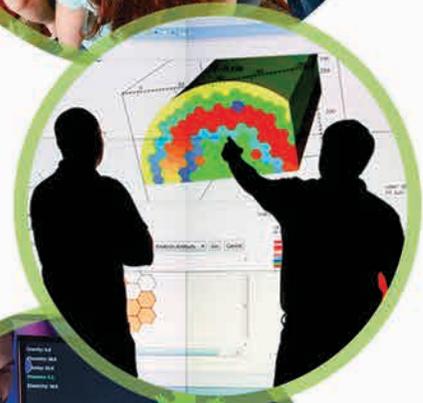
Inspired by Science

Oak Ridge National Laboratory is a welcoming and vibrant research community with unmatched facilities, instruments, and expertise. We are home to the brightest minds and a global destination for those who aspire to achieve, to be the best, and to share our legacy of impact through science and innovation.

Breakthrough Science at Every Scale

Our expertise in supercomputing is critical to solving some of America's most daunting scientific challenges, including improvements to the safety and performance of nuclear power plants, the development and delivery of medicines, and the design of novel materials. Through world-class computing and computational resources, our researchers can accelerate scientific discovery, simulate and improve the performance of new materials and technologies, and better understand the complex physics that drive the energy systems around us.

Learn about computer scientist Ramki Kannan and other researchers at www.ornl.gov/news/profiles, and discover how you can become part of our team by viewing internship/recent graduate opportunities at www.ornl.gov/orau and full-time opportunities at www.ornl.gov/careers.



Managed by UT-Battelle for the US Department of Energy

www.ornl.gov



DIVERSITY IN COMPUTING

Texas A&M University offers undergraduate and graduate degrees in Computer Science and Computer Engineering. Graduates hold leadership positions in industry, government and academia. Texas A&M's Department of Computer Science and Engineering is developing the human and intellectual resources needed for future computing technological challenges.

Tenured/Tenure-Track



Nancy Amato
Unocal Professor,
Regents Professor



Theodora Chaspari
Assistant Professor



Dilma Da Silva
Professor, Holder of the Ford Motor
Company Design Professorship II



Juan Garay
Professor



Tracy Hammond
Professor



David Kebo Hounninou
Instructional Assistant Professor



Ruihong Huang
Assistant Professor



Daniel Jiménez
Professor



Eun Jung Kim
Associate Professor



Robin Murphy
Raytheon Professor

Teaching-focused



Jennifer Welch
Chevron Professor II,
Regents Professor



Paula deWitte
Associate Professor of Practice



Hyunyoung Lee
TEES Research Associate
Professor, Senior Lecturer



Teresa Leyk
Senior Lecturer

DO THE IMPOSSIBLE. EVERY DAY.

Illinois Computer Science has a global reputation for developing revolutionary technology where groundbreaking research addresses real-world problems. Our expertise is deep and broad: our **top-5 graduate program** has over 100 potential faculty advisors to choose from in CS and related fields.

**Dynamic & Stimulating
Research Culture**

World-Class Faculty

**Extraordinary
Quality of Life**

**Affordable Micro-
Urban Community**

**Vibrant Ecosystem for
Entrepreneurs**

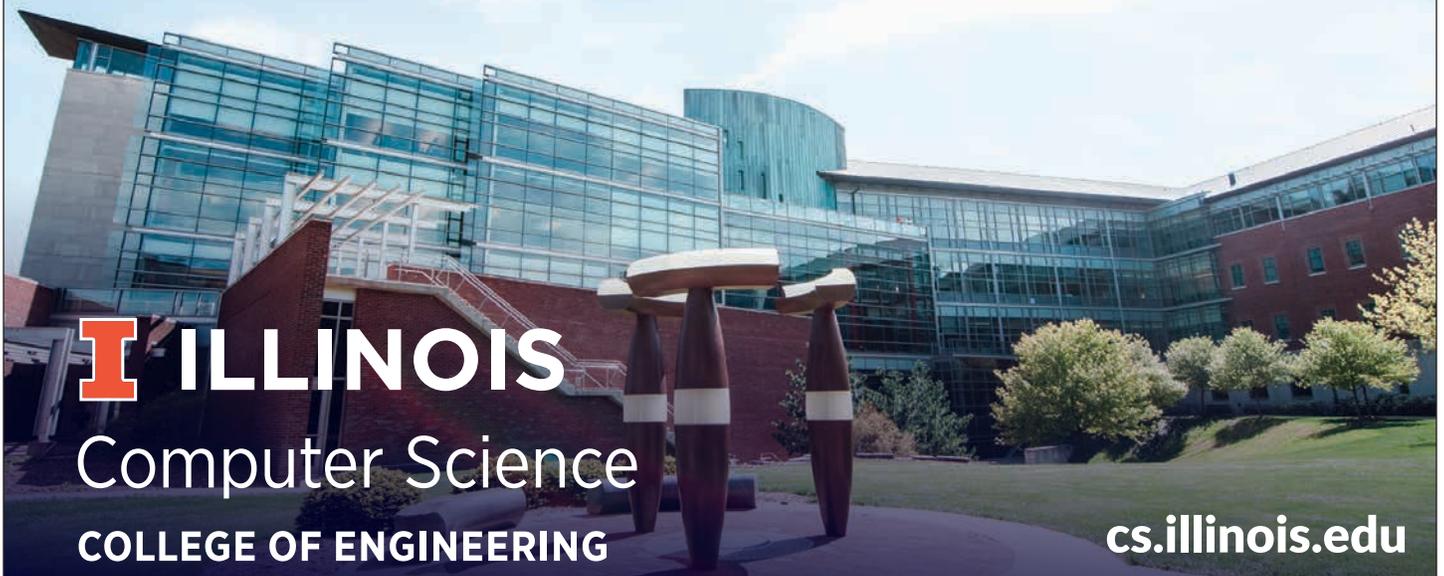
Choose Your Degree Program

- PhD in Computer Science
- MS in Computer Science
- MS in Bioinformatics
- Master of Computer Science (MCS)
 - On Campus
 - Online (via Coursera)
 - Online in Data Science (via Coursera)

For application deadlines and more information, see:

go.cs.illinois.edu/GradPrograms

**Visit our booth
at Tapia 2018!**



I ILLINOIS
Computer Science
COLLEGE OF ENGINEERING

cs.illinois.edu

UNIVERSITY OF SOUTHERN CALIFORNIA

USC Viterbi School of Engineering

#1 Online Graduate Computer Science Program*



Top Reasons to Earn Your Graduate Degree at USC Viterbi

World Recognized

USC Viterbi is ranked a **Top 10 Graduate Engineering** program by *U.S. News & World Report** and amongst the top graduate engineering programs by the Academic Ranking of World Universities**.

* *U.S. News & World Report*, 2018

***Academic Ranking of World Universities*, 2017

On Campus & Online

40+ graduate engineering programs are offered on campus and online from **any location around the world – same program, same degree**, including the **#1 Online Graduate Computer Science Program***.

Los Angeles - A Global Center

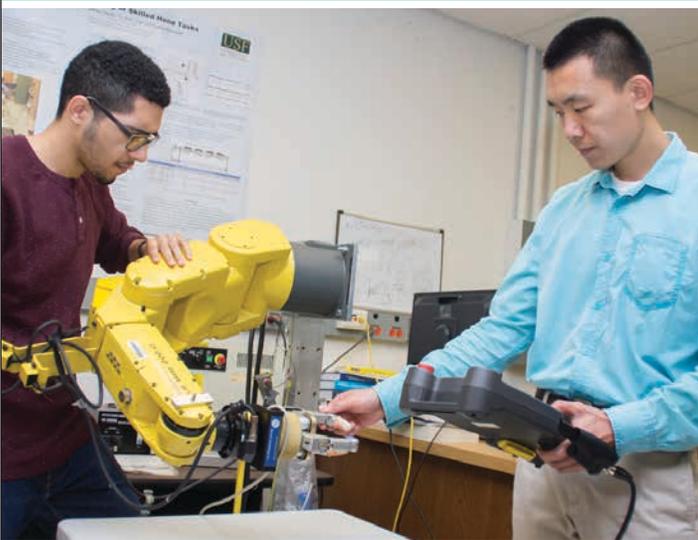
Located in one of the most **dynamic and culturally diverse cities in the world**, USC Viterbi connects students with a wide range of career opportunities in **technology, research, innovation and entrepreneurship**.

LEARN MORE: viterbi.usc.edu/Tapia18

USC Viterbi
School of Engineering



USC University of
Southern California



Apply for the Graduate Program!



Department Information

By the west shores of Florida, in the city of Tampa, we have a world class computer science and engineering program that excels in cybersecurity, artificial intelligence, social network analysis, computer vision, robotics, big-data algorithms, and efficient computing platforms and hardware.

Graduate Programs Information

The Department offers the degrees of M.S. in Computer Science, M.S. in Computer Engineering, and M.S. in Information Technology, and the Ph.D. degree in Computer Science and Engineering. Our degrees prepare students for careers in both academia and industry. They are well placed in research labs, private industry, and educational institutions both in the United States and abroad. The CSE department is committed to promoting diversity in our students, faculty, and staff.

For more information about the CSE graduate program:



Funding for Graduate Study

We have generous fellowships, teaching assistantships (TA) and research assistantships (RA) available **for all Ph.D.** students and qualified M.S. students, which include a stipend, health insurance and tuition waiver.

WE WELCOME YOU
TO CHANGE THE WORLD



KUNMI OTITOJU

: *Masters in Computer Science and Applications*

Kunmi, a Forbes Most Promising Young Entrepreneur, founded Minku Design with a blend of hand-loomed Nigerian cloth and a Masters in Computer Science.

Study at Virginia Tech and find your blend of creativity in computing.

Computer Science at Virginia Tech
Undergraduate | Graduate | PhD | Faculty



www.cs.vt.edu

It's our people who
impact lives through
technology.



sandia.gov/careers

Sandia is a top science and engineering
laboratory for national security and
technology innovation. Here you will find
rewarding career opportunities for
Bachelor's, Master's, and Ph.D. levels in:

- Electrical Engineering
- Mechanical Engineering
- Computer Science
- Computer Engineering
- Cybersecurity
- Data Science
- Systems Engineering
- Chemistry
- Mathematics
- Information Systems
- Physics
- Materials Science
- Business Applications
- Aerospace Engineering



SCAN TO SEE VIDEO

*World-changing technologies.
Life-changing careers.*

Equal opportunity employer/Disability/Vet/GLBT

Read it. Click it. Get it.



DiversityComm is proud to sponsor ACM Richard TAPIA
Download your complimentary issue:
www.DiversityComm.net/tapiaconference

Join the Conversation!

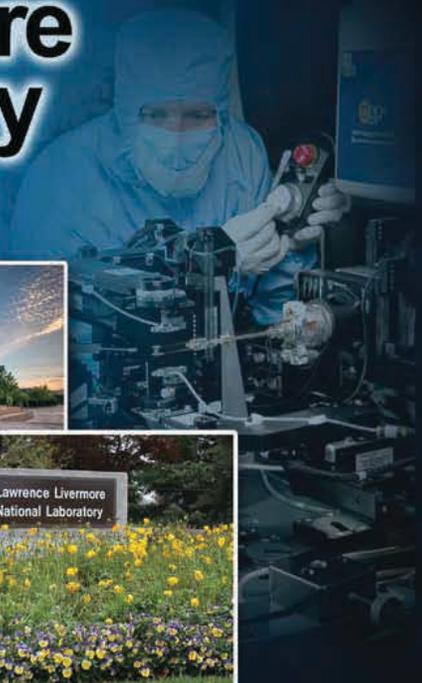




Lawrence Livermore National Laboratory

Lawrence Livermore National Laboratory Promotes a culture of innovations, excellence, diversity and team science that benefits the nation, as well as the world.

Our mission is to strengthen the United States security through development and application of world-class science and technology.



Computer Scientists: <https://computation.llnl.gov/home>

Will You Be the One to Make a Difference?

<https://careers.llnl.gov>

Join the excitement that comes from discovering the mysteries of the universe!

Fermilab is America's premier particle physics and accelerator laboratory, funded by the U.S. Department of Energy. Collaborating with thousands of scientists and engineers from around the world, our 1,750 employees perform pioneering research, operate world-leading particle accelerators and experiments, and develop technologies for science in support of U.S. industry.

Fermilab offers an inclusive and family-friendly work experience. We are seeking research associates, engineers and information technology professionals committed to lifelong learning, teamwork and of course, cutting edge research.

When will you apply and join us?

www.fnal.gov



SHAPE THE FUTURE WITH US.

We make the software and tools that help people imagine, design and make a better world. Join us and help lead the future of design.

DID YOU KNOW?

- Autodesk's Summer Internship Program is 10 to 12 weeks long.
- We offer opportunities in business, engineering and design.
- Internships are available in San Francisco, Boston, Portland and Novi.
- Check our career site in the fall for open positions.

 autodesk.com/careers

 collegerecruiting@autodesk.com

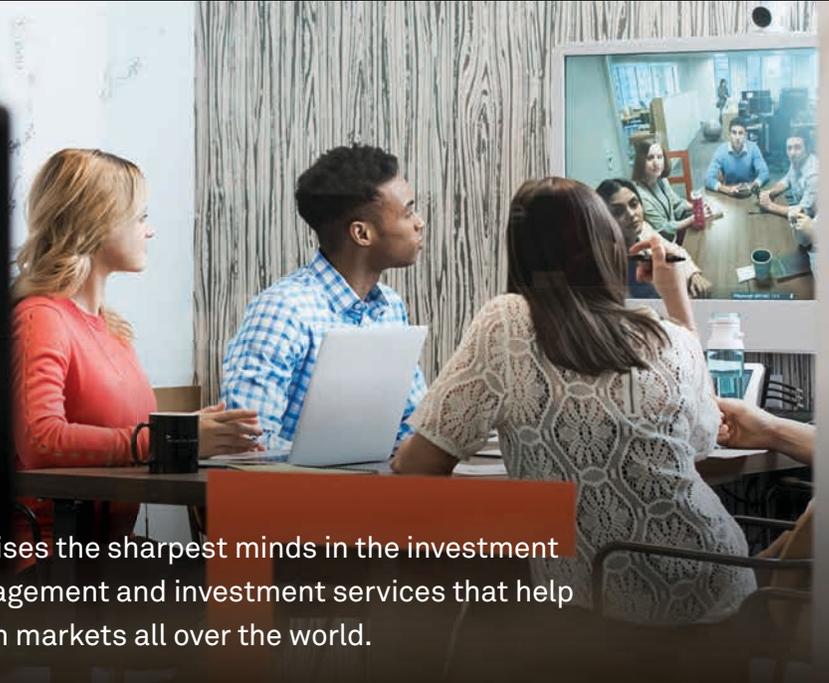
#autodesklife

 AUTODESK



We see the world like no one else.

BNY Mellon's global workforce comprises the sharpest minds in the investment industry. We provide investment management and investment services that help institutions and individuals succeed in markets all over the world.



Discover new opportunities at bnymellon.com/careers.

#BeBNYMellon     

BNY Mellon is an Equal Employment Opportunity/Affirmative Action Employer. Minorities/Females/Individuals with Disabilities/Protected Veterans. © 2018 The Bank of New York Mellon Corporation.



BNY MELLON



**IT FEELS LIKE A BIG
START-UP. A PLACE
WHERE YOU CAN
PUSH AND BE HEARD.**

ADEDOLAPO A.



WHATEVER YOU DO, **BE YOU**

Unique problems can only be solved with unique perspectives. Start your career with a company that values diverse thought and backgrounds. Because here at Capital One, we want you to bring your whole self to work. Join us at capitalonecareers.com

EEO Employer/Protected Veteran/Disabled



Together, with Counsyl

Whether it's starting a family or evaluating risk for cancer, our genetic screens provide women and their families with early awareness about genetic conditions, so they can live informed and prepare for the future.



Ask your doctor or visit counsyl.com to learn more



AT FIDELITY, OUR DIFFERENCES
DEFINE US – AND OUR
VALUES UNITE US.

Professional development, strong relationships, and competitive benefits - just a few of the reasons thousands of associates are building their careers at Fidelity Investments. We reward ambitious, passionate individuals, like you, with a work environment that fosters teamwork and collaboration while encouraging innovative ideas and fresh thinking.

Explore our career opportunities at fidelitycareers.com/college



Fidelity Investments is an equal opportunity employer



HARVARD
John A. Paulson
School of Engineering
and Applied Sciences

GRADUATE PROGRAMS



The Harvard John A. Paulson School of Engineering and Applied Sciences' doctoral and master's degree programs lie at the interfaces of engineering, the applied sciences, and technology.

SEAS brings the full resources of the University to bear to enable new discoveries and innovations.

Areas of Study

- Applied Mathematics
- Applied Physics
- Computational Science & Engineering
- Computer Science
- Engineering Sciences

Collaborative Programs

- Master in Data Science with the Harvard Statistics Department
- Master in Design Engineering with the Harvard Graduate School of Design
- MS/MBA with the Harvard Business School

For a full listing of degree programs please visit: seas.harvard.edu/academics/graduate

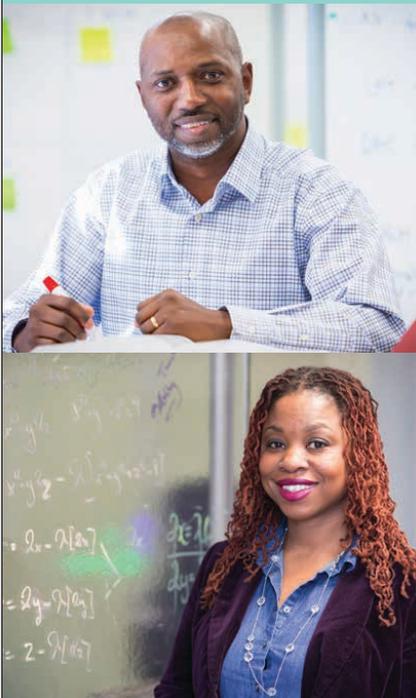
Harvard Paulson School | 29 Oxford Street, Cambridge, MA 02138 | seas.harvard.edu

A NATIONAL RESOURCE FOR AFRICAN-AMERICANS IN COMPUTING



IAAMCS
INSTITUTE for AFRICAN-AMERICAN
MENTORING in COMPUTING SCIENCES

LEARN HOW WE CAN HELP
www.iaamcs.org



Apply your talent. Shape the future.

Interested in thwarting sophisticated cyber attacks? How about engineering pocket-sized robots or exploring the expanses of the solar system? This is what staff members of the **Johns Hopkins Applied Physics Laboratory (APL)** are doing.

To join them, you can use your experience in a variety of areas, including **electrical engineering, computer engineering, computer science, cyber security, information systems, systems engineering, mechanical engineering, aerospace engineering, applied math and applied physics**. Selected applicants must be a U.S. citizen and may be subject to a government security investigation and must meet the requirements for access to classified information.

Confront the nation's toughest challenges and help shape the future at one of the nation's premier engineering, research and development centers. Sound like a future meant for you?

Learn more about careers at APL
and apply at www.jhuapl.edu

Johns Hopkins Applied Physics Laboratory is an equal opportunity/affirmative action employer that complies with Title IX of the Education Amendments Act of 1972, as well as other applicable laws, and values diversity in its workforce.

 **JOHNS HOPKINS**
APPLIED PHYSICS LABORATORY

We're proud to sponsor the 2018 ACM Richard TAPIA Conference.

Are you ready to build the next generation of financial technology solutions for people around the globe?

We know that great innovators don't fit into molds. They break them. So if you're a creative problem solver who is passionate about...

- Working in a fast paced, agile environment
- Collaborating with colleagues around the world on meaningful and challenging projects
- Being part of a supportive culture that values your unique perspective

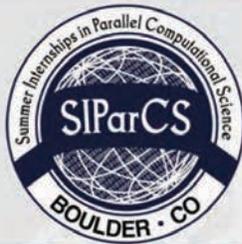
...we'd like to meet you at booth #204.

jpmorganchase.com/techcareers



© 2018 JPMorgan Chase & Co. JPMorgan Chase is an equal opportunity and affirmative action employer of people with Disabilities and Veterans.

OTICS DATA BIG DATA MACHINELEARNING ROBOTICS DATA BIG DATA MACHINELEARNING ROBOTICS DATA BIG DATA MACHINE LEARNING ROBO
LE INNOVATION VISUALIZATION CYBERSECURITY AGILE INNOVATION VISUALIZATION CYBERSECURITY AGILE INNOVATION VISUALIZATION CYBERSECURITY AGILE
LABORATIVE CLOUD BLOCKCHAIN FINTECH COLLABORATIVE CLOUD BLOCKCHAIN FINTECH COLLABORATIVE CLOUD BLOCKCHAIN FINTECH COL
HINE LEARNING MOBILE SOLUTION BIG DATA MACHINELEARNING MOBILE SOLUTION BIG DATA MACHINELEARNING MOBILE SOLUTION BIG DATA MACH
FINTECH ROBOTICS DATA VISUALIZATION FINTECH ROBOTICS DATA VISUALIZATION FINTECH ROBOTICS DATA VISUALIZATION



RESEARCH | MENTORING | OPPORTUNITY

at the National Center for Atmospheric Research

www2.cisl.ucar.edu/siparcs

Visit us in the exhibit hall!



**EQUALITY ISN'T A GAME.
BUT ACHIEVING IT WILL BE
THE GREATEST VICTORY.**



JOBS.NIKE.COM



PennState
College of Information
Sciences and Technology

Be you, with us.

New perspectives lead to new solutions.
Collaboration and communication breed innovation.
Diversity drives access and opportunity.

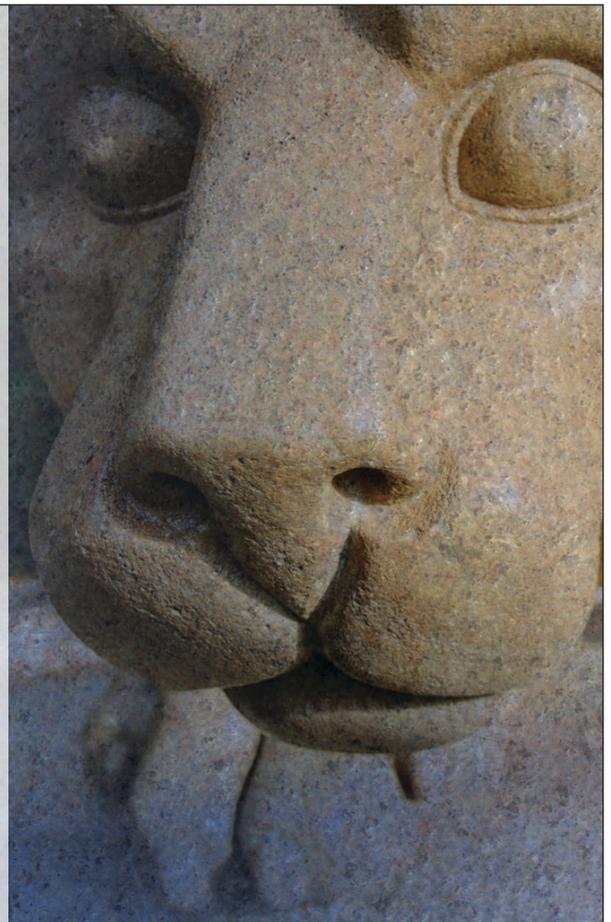
From our transformative research to our interdisciplinary graduate programs, these principles guide all that we do. Our faculty bring unique personal and professional backgrounds to the classroom and lab. Our students address complex technological and social issues to become leaders in the information age.

And they do it all in a welcoming and inclusive environment.

We are difference makers. We are problem solvers.

We are Penn State.

ist.psu.edu | diversity@ist.psu.edu



ENGINEER YOUR FUTURE



PennState
Applied Research Laboratory

arl.psu.edu

PURDUE
UNIVERSITY®

Department of
Computer Science
COLLEGE OF SCIENCE

**COMPUTER
SCIENCE**
GRADUATE PROGRAMS

EXPERIENCE THE EXCITEMENT AND ENERGY OF COMPUTER SCIENCE AT PURDUE

- Our faculty members are seeking talented, motivated grad students who are excited about computer science
- Our program is consistently ranked in the top 20 by *US News and World Report*
- Full funding is available (fellowships, research or teaching assistantships)
- Our department-level diversity director is committed to supporting our female and minority students

LEARN MORE:

www.cs.purdue.edu • grad-info@cs.purdue.edu



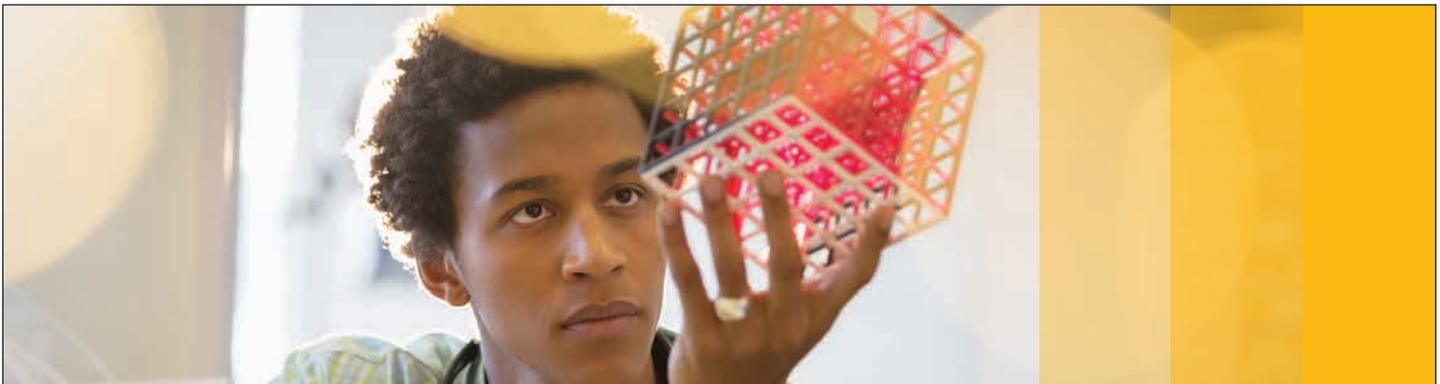
WE'RE HIRING ACROSS THE GLOBE!

Interested in blazing your trail with us? Great news, we're hiring for roles in:

- + Engineering
- + Finance
- + Product
- + Customer Success
- + Sales
- + Marketing

APPLY TODAY salesforce.com/university-recruiting


 @SalesforceEdu
  SalesforceforceUniversityRecruiting
  @SalesforceFutureforce
  FutureforceVideo



At SAP, we put huge effort into creating a workplace that attracts motivated, creative, and forward-thinking employees who will help us continue to innovate and grow. We're looking for a new generation of talent who will bring fresh ideas and perspectives to the table. If you're searching for a career with a company that's dedicated to sustainability, gives you a strong sense of purpose, and provides a fun and flexible job environment, let's talk! We'll fill you in on our mission to help companies of all sizes run better and our vision to help the world run better and improve people's lives.

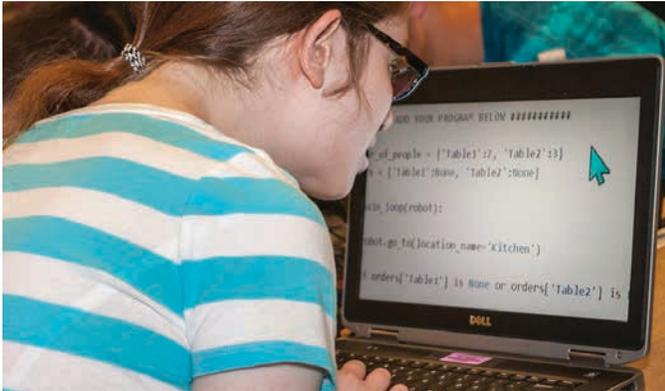
@LifeatSAP @SAPiXp



© 2018 SAP SE or an SAP affiliate company. All rights reserved. Information herein is subject to change without notice.



works to increase the participation of people with disabilities in computing and to encourage faculty to teach accessibility.



- **Students with disabilities** connect with peers, mentors, and internships.
- **Faculty** connect with others interested in accessibility.
- **Companies** strategize about recruiting and retaining employees with disabilities.

uw.edu/accesscomputing

Supporting, Celebrating and Advocating for Women in Computing

ACM-W supports, celebrates, and advocates internationally for the full engagement of women in all aspects of the computing field. ACM-W fulfills its mission by providing a wide range of programs and services to ACM members and working in the larger community to advance the contributions of technical women, including:

- ACM Celebrations of Women in Computing
- ACM-W Student and Professional Chapters
- Scholarships for students to attend technical conferences

To learn more about ACM-W and these programs, and to get involved, visit <https://women.acm.org>.

<https://women.acm.org>



Let's create experiences that matter.

Feed your curiosity, stretch your imagination and work with a diverse community of creative and analytical thinkers.



Visit our booth to discuss Adobe careers.

**RIGHT PLACE.
RIGHT PATH.
RIGHT PURPOSE.**

Take your place in space.

Join an organization that touches every part of the U.S. space program. Work elbow-to-elbow with the industry's top scientists and engineers. Tackle the most complex challenges and safeguard the most critical missions.

See you at the 2018 Tapia Conference.



Explore. Learn. Apply.

aerospace.org/careers



U.S. Citizenship is required for most positions. The Aerospace Corporation is an Equal Opportunity/Affirmative Action employer. We believe that a diverse workforce creates an environment in which unique ideas are developed and differing perspectives are valued, producing superior customer solutions. All qualified applicants will receive consideration for employment and will not be discriminated against on the basis of race, age, sex (including pregnancy, childbirth, and related medical conditions), sexual orientation, gender, gender identity or expression, color, religion, genetic information, marital status, ancestry, national origin, protected veteran status, physical disability, medical condition, mental disability, or disability status and any other characteristic protected by state or federal law.

affirm

WE'RE HIRING

<https://www.affirm.com/careers>

Big challenges. Beautiful solutions.

Join us as we create a world that inspires human connection.

Learn more at airbnb.com/careers

airbnb
Belong Anywhere

asana

Help humanity thrive by empowering all teams to work together effortlessly.

We have a big mission and an even bigger opportunity, and we're off to a great start. Teams from the world's fastest-growing companies track their work and achieve their goals with Asana.

We'd love to see what you might add to our team. Visit asana.com/jobs

BLACKROCK®

Put your ideas to work and build on the collective intelligence of one of the largest FinTech firms in the world.

Our clients are companies, governments, foundations, and millions of individuals saving for retirement, their children's educations, and a better life. We are passionate about providing products and services that can help them build a strong financial future.

Our employees from around the globe are students of the market and students of technology, respectfully antibureaucratic, and innovative at the core. Join us and make an even bigger impact.

**BIGGER DATA
SMARTER MONEY
MASSIVE IMPACT**

Questions? Email the Campus Recruiting team at campus.careers@blackrock.com

UK No: CF-USCARD-0817 0088465-EXT-0817

Ready to
build the
platform
of tomorrow
right now?

We're building the world's most trusted information source and community for financial professionals. Our nearly 5,000 technologists define, architect, build and deploy complete systems to fulfill the needs of leading financial market participants globally.

Bloomberg.com/careers

Architect on purpose.

Engineering

Bloomberg

© Bloomberg L.P. 2018 238378 0718



Build the future of
money with us today.

Hiring frontend, backend,
cryptographers and researchers.

—
chain.com/careers

You've fulfilled
your parents' dreams.
Now become a hacker's
worst nightmare.

trust.cisco.com

 <https://www.facebook.com/WeAreCisco>

   @wearecisco



courseera

We envision a world
where anyone,
anywhere can transform
their life by accessing
the world's best learning
experience.

coursera.org/careers



Creating and enabling
spectacular experiences



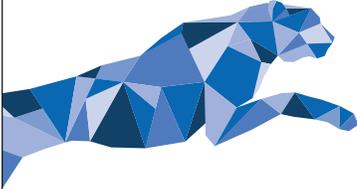
For more university recruiting and early career
engineering opportunities, visit dolby.com/careers



How we work:

Extraordinary people that do meaningful
work with impact all over the world.

Help make an impact!
eBay.com/students

FAST
ENTERPRISES

code.
explore.
communicate.

"The best part about working for FAST is the wonderful community of fun, intelligent people that I get to work and interact with every day."
- Matthew, Implementation Consultant

Come speak with us during the
career expo!

[f](https://www.facebook.com) [i](https://www.instagram.com) [t](https://www.twitter.com) [y](https://www.youtube.com) [in](https://www.linkedin.com)

fastenterprises.com



FLORIDA STATE UNIVERSITY
SCHOOL OF INFORMATION

EARN YOUR MASTER'S FULLY ONLINE!

INFORMATION TECHNOLOGY or **INFORMATION**
ALA-Accredited





Visit our booth!
TAPIA 2018

ischool.cci.fsu.edu
ischooladvising@admin.fsu.edu
Ask about our GRE waiver!

CONTACT US

LACAFI

Pursue an academic career as a mentor, a teacher, and a scholar

A sampling of open positions
(more on the LACAFI site)

Grinnell: Tenure-Track, Area Open
www.cs.grinnell.edu

Carleton: Tenure-Track, Area Open
www.cs.carleton.edu

Haverford: Tenure-Track, Application Focus
www.haverford.edu/computer-science

Oberlin: Tenure-Track & Term
www.cs.oberlin.edu

Williams: Multiple Tenure-Track, Area Open
www.cs.williams.edu

**Liberal Arts College Association
for Faculty Inclusion**
web.grinnell.edu/science/lacafi



Navigating life together.

Through innovative thinking and cutting-edge technology we are transforming the way we do business.

We want **YOU** to be a part of this transformation.

<https://jobs.metlife.com>



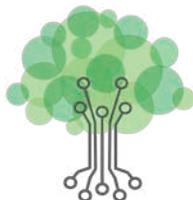
Faculty positions in CS & EE!

Harvey Mudd College is a highly selective undergraduate institution focused on STEM.

It is located in Claremont, CA, which is 35 miles east of Los Angeles.

Questions? colleen@cs.hmc.edu

Want tips for inclusive teaching?
CSTeachingTips.org
@CSTeachingTips
(NSF # 1339404)



INDIANA UNIVERSITY
**SCHOOL OF INFORMATICS,
COMPUTING, AND ENGINEERING**

Bioinformatics • Computer Science • Data Science
• Human-Computer Interaction Design • Informatics •
Information Science • Intelligent Systems Engineering
• Library Science • Secure Computing

sice.indiana.edu



FREE PROFESSIONAL HEADSHOTS

#poweredbyJOPWELL

Swing by our booth to get your professional headshot taken and learn how Jopwell supports Black, Latinx, and Native American students & professionals.

Sign up now to skip the line:
www.jopwell.com/events/tapia2018




Start your career with Lyft
lyft.com/careers



Revolutionizing the Face of Technology®

NCWIT is a non-profit community of more than 1,100 universities, companies, non-profits, and government organizations nationwide working to increase girls' and women's meaningful participation in computing.

Impact beyond measure; opportunity beyond limits.



OSCAR
 #JoinOscar

OUTREACHY

Internships supporting diversity
in Free and Open Source Software



\$5,500 stipend with remote mentoring

Apply: Feb - Mar
Intern: **May - Aug**

Apply: Sep - Oct
Intern: **Dec - Mar**

Stop by our booth or visit
<http://outreachy.org>



W PAUL G. ALLEN SCHOOL
OF COMPUTER SCIENCE & ENGINEERING

FULL-TIME PH.D. PROGRAM



**APPLICATIONS FOR FALL 2019
DUE DECEMBER 15**

Visit us online at cs.washington.edu/academics/phd

 PRINCETON UNIVERSITY

PRINCETON
School of Engineering and Applied Science

Why Study at Princeton?

Fully Funded PhD Programs

Close Engagement with

World Class Faculty

Interdisciplinary Culture

Opportunities for Entrepreneurship

<https://www.cs.princeton.edu/grad>

World-changing
inventions start
here.

Qualcomm.com

Qualcomm



Looking for a tenure-track faculty position in Computer Science?

St. Mary's College of Maryland invites applications for a tenure-track position in Computer Science. A successful applicant will be an outstanding teacher with a commitment to attracting and retaining students from underrepresented groups (including women).

Questions may be addressed to
CS-search2018@smcm.edu



UC Berkeley School of Information

WHERE OPPORTUNITY BEGINS

With diverse, interdisciplinary programs, the I School develops technology leaders prepared for an exploding job market.

We offer four degree programs:

- Master of Information Management & Systems (MIMS)
- Master of Information and Data Science (MIDS)
- Master of Information and Cybersecurity (MICS)
- Ph.D. in Information Management & Systems

ischool.berkeley.edu

Berkeley SCHOOL OF INFORMATION

SRI International®

SRI pushes the boundaries of innovation and imagination every day.

We offer a variety of technical staff and intern positions in computer vision, engineering, robotics, and more.

Visit our table for more information!

sri.com/careers



THIS CHANGES EVERYTHING.

RESEARCH | FACILITIES | FACULTY

785-864-3881 | KUEngrGrad@ku.edu

Apply today!
graduate.ku.edu/apply

KU SCHOOL OF ENGINEERING
The University of Kansas

RESEARCH & GRADUATE PROGRAMS





GRADUATE PROGRAMS and CERTIFICATES

School of Information Science +
Department of Computer Science

PH.D./M.S. IN COMPUTER SCIENCE

M.S. IN INFORMATION
COMMUNICATION TECHNOLOGY

M.S. IN LIBRARY AND
INFORMATION SCIENCE *(online)*

INSTRUCTIONAL COMMUNICATION
CERTIFICATE

INFORMATICS CERTIFICATE



infosci.uky.edu | cs.uky.edu

University of North Texas

Graduate Student Openings

The UNT Department of Computer Science and Engineering (CSE) is seeking M.S. and Ph.D. students to fill Teaching and Research Assistantships starting Aug. 15, 2019. UNT CSE has 12 Professors, 8 Associate Professors, 5 Assistant Professors, 5 Lecturers, 100 Ph.D. students, 200 M.S. students and 1,200 Bachelor's students. We offer a Ph.D. degree in Computer Science and Engineering and M.S. degrees in Computer Science and Computer Engineering.

The department's research strengths include Algorithms and Computational Science, Computer Security, Computer Systems and Networks, Databases and Data Mining, Intelligent Systems, and Software Engineering. With over 38,000 students, UNT is a Tier 1 Research University (Carnegie Classification), the largest, most comprehensive university in Dallas-Fort Worth, and the nation's 24th largest university. Additional information about the department is available at www.cse.unt.edu.



COMPUTER SCIENCE AND ENGINEERING



We are

A plural pronoun, "we" includes everyone who comes and participates. It encourages thoughts and actions that meet a common goal.

We in the Department of Computer Science and Engineering at Notre Dame consider the needs of society and put our heads, hearts, and hands into meetings those needs.

Come join us in making a difference.

stronger together

cse.nd.edu

UMBC

College of Engineering
and Information Technology



**CLAIM YOUR
FUTURE**



UMassAmherst

College of Information
& Computer Sciences

YOU BELONG IN COMPUTER SCIENCE.



Stop by our table in the Exhibit Hall to meet Erika Dawson-Head, CICS Director of Diversity, and learn about our graduate programs and open faculty positions.

cics.umass.edu



MASTERS PROGRAMS

GAMES
& PLAYABLE MEDIA

AND

**SERIOUS
GAMES**



It's never too late to pursue a career in modeling.

1 year Master's degree with courses in machine learning, statistical modeling, distributed computing and deep learning.

APPLY ► datascience.usfca.edu

Early Application Deadline Dec 5



UNIVERSITY OF
SAN FRANCISCO

Master of Science
in Data Science

UNIVERSITY OF SAN FRANCISCO

MASTER OF SCIENCE IN COMPUTER SCIENCE



To request information and receive an application waiver (\$55 value) visit bit.ly/tapia2018

NOTES

NOTES

NOTES

NOTES



**SAVE THE DATE
TAPIA 2019**

**2019 ACM RICHARD TAPIA
CELEBRATION OF DIVERSITY IN COMPUTING CONFERENCE**

**SEPTEMBER 18 – 21, 2019
SAN DIEGO, CALIFORNIA**

WWW.TAPIACONFERENCE.ORG