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# Pittsburgh Women in Mathematics and Computing Symposium

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**February 24, 2023**

Carnegie Mellon University



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# Introduction

The inaugural Pittsburgh Women in Mathematics and Computing Symposium (WMCS) took place on February 24th at Carnegie Mellon University (CMU) in Pittsburgh. Organized by Mansi Sood and Isabel Murdock with generous support from Lisa Simonyi and the IAS Women and Mathematics Program, and the CMU Electrical and Computer Engineering (ECE) Diversity, Equity & Inclusion Committee, the event brought together students from CMU, the University of Pittsburgh, and Duquesne University. The speakers and guests included 15 faculty members from a variety of departments including Mathematics, ECE, Computer Science, Statistics, and Robotics.

Link to event website: <https://wmcs-2023.splashthat.com>

Goals:

- Open doors to new collaborations among students and faculty members working at the interface of mathematics, computing, and engineering
- Expand support structures, provide early mentorship, and foster long-lasting connections
- Create channels to improve access to information, resources, and opportunities
- Build the community and capacity to help organize future events to support students in mathematics and computing-related fields

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# Acknowledgements

We thank Lisa Simonyi, the IAS Women and Mathematics Program and the CMU ECE Diversity, Equity & Inclusion Committee.



**Carnegie Mellon University**  
Electrical & Computer Engineering  
Diversity, Equity & Inclusion

We are grateful to our incredible speakers and volunteers for supporting our vision and investing so much time and energy in making WMCS a success - it wouldn't have been possible without their help! A big thanks to Giulia Fanti, Kimmy Nguyen, and Stefanie Garcia for being our mentors. We are incredibly grateful to Giulia for helping us build a vision for the event and providing valuable feedback on how to structure it, and to Kimmy for providing logistical and organizational support. We thank Michelle Huguenin and Margaret Readdy for their support and encouragement. We are also extremely grateful to all the participants and organizers of the 2022 IAS Women and Mathematics Program and the Computing Research Association's Committee on Widening Participation (CRA WP) Grad Cohort for Women for inspiring us to organize WMCS.

Sincerely,  
Mansi Sood  
Isabel Murdock

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# Team

## Organizers



Mansi Sood

PhD Student  
Electrical & Computer Engineering  
Carnegie Mellon University



Isabel Murdock

PhD Student  
Electrical & Computer Engineering  
Carnegie Mellon University

## Mentors



Giulia Fanti

Assistant Professor  
Electrical & Computer Engineering Department  
Carnegie Mellon University



Kimmy Nguyen

Director of Operations & External Relations  
Electrical & Computer Engineering Department  
Carnegie Mellon University



Stefanie Garcia

Outreach Coordinator for Diversity, Equity, and  
Inclusion  
Electrical & Computer Engineering Department  
Carnegie Mellon University



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## Event Planning Committee



**Sofia Martins**

PhD Student  
Electrical & Computer Engineering  
Department  
Carnegie Mellon University



**Upasana Sridhar**

PhD Student  
Electrical & Computer Engineering  
Department  
Carnegie Mellon University



**Adithi Phadke**

First Year Student  
College of Engineering  
Carnegie Mellon University



**Derya Tansel**

PhD Student  
Electrical & Computer Engineering  
Department  
Carnegie Mellon University

## Web & Publicity Committee



**Upasana Sridhar**

PhD Student  
Electrical & Computer Engineering  
Carnegie Mellon University



**He Wang**

PhD Student  
Electrical & Computer Engineering  
Carnegie Mellon University



**Serena Shih**

First Year Student  
College of Engineering  
Carnegie Mellon University



**Yurun Tian**

PhD Student  
Electrical & Computer Engineering  
Carnegie Mellon University

## Event Volunteers

Adithi Phadke

Amanda Perez

Derya Tansel

Eray Can Elumar

He Wang

Indulekha Madathil

Jenn Gooch

Jessie Fan

Neharika Jali

Samantha Phillips

Serena Shih

Shimiao Li

Sofia Martins

Upasana Sridhar

Wen Hui Leng

Yurun Tian

# Event Schedule

## Morning Session - Rangos 3

9:40am: Opening Talk



Carlee Joe-Wong

Robert E. Doherty Career  
Development Professor  
Electrical & Computer  
Engineering Department,  
Carnegie Mellon University

10:15am: Professional  
Development Workshop



Akshitha Sriraman

Assistant Professor  
Electrical & Computer  
Engineering Department,  
Carnegie Mellon University

11:00am: Grad School  
Panel



Giulia Fanti



Henry Admoni



Limin Jia



Samantha Allen

PITTSBURGH WOMEN IN  
MATHEMATICS & COMPUTING

## Afternoon Session - Rangos 3

12:45pm: Getting  
Started with Research  
Panel



Motahhare Eslami



Theresa Anderson



Auliti Raghunathan



Amy Babay



Hoda Heidar



Yuejie Chi



Rana Zakerzadeh

1:30pm: Faculty Research  
Presentations



Nynka Huzina



Reem K. Vintayak

4pm: Graduate Student  
Lightning Talks



Katherine Kissian



Sherry Sarkar



Victoria Dean

PITTSBURGH WOMEN IN  
MATHEMATICS & COMPUTING

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## Full Schedule:

9:00 AM - 9:30 AM	Registration with Light Refreshments
9:30 AM - 9:40 AM	Welcome & Introductions
9:40 AM - 10:10 AM	Opening Talk – Contextualizing Mathematics in Computing and Societal Systems
10:15 AM - 10:55 AM	How to Build Your Professional Persona & Networks
11:00 AM - 11:40 AM	“Grad School: What to Expect and How to Apply” Panel
11:45 AM - 12:45 PM	Lunch & Networking
12:45 PM - 1:30 PM	“How to Get Started with Research” Panel
1:30 PM - 3:30 PM	Faculty Research Presentations (including undergraduate opportunities and advice)
3:30 PM - 4:00 PM	Break & Networking
4:00 PM - 5:00 PM	Student Lightning Talks
5:00 PM - 5:15 PM	Closing
5:15 PM - 6:30 PM	Reception



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# Speakers



Aditi Raghunathan

Assistant Professor

Computer Science  
Department,  
Carnegie Mellon University

I am an Assistant Professor in the Computer Science Department at Carnegie Mellon University. I am also affiliated with the Machine Learning Department. I work broadly in machine learning and my goal is to make machine learning more reliable and robust. My work spans both theory and practice, and leverages tools and concepts from statistics, convex optimization, and algorithms to improve the robustness of modern systems based on deep learning.

Until recently, I was a postdoc at Berkeley AI Research. I received my PhD from Stanford University in 2021 where I was fortunate to be advised by Percy Liang. My thesis won the Arthur Samuel Best Thesis award at Stanford. Previously, I obtained my BTech in Computer Science from IIT Madras in 2016.



## Akshitha Sriraman

Assistant Professor

Electrical & Computer  
Engineering Department,  
Carnegie Mellon University

Akshitha Sriraman is an Assistant Professor at Carnegie Mellon University. Her research interests are in the area of bridging computer architecture and systems software, with a focus on making hyperscale data centers more efficient, sustainable, and equitable (via solutions that span the systems stack). Sriraman's research has been recognized with the 2022 ACM SIGARCH/TCCA Outstanding Dissertation Award Honorable Mention, the 2022 ACM SIGOPS Dennis M. Ritchie Doctoral Dissertation Award Honorable Mention, an IEEE Micro Top Picks distinction, the 2021 ProQuest Distinguished Dissertation Award, and the 2021 David J. Kuck Dissertation Prize. She was awarded a Facebook Fellowship, a Rackham Merit Ph.D. Fellowship, and a CIS Full-Tuition Scholarship. She was also named a 2019 Rising Star in EECS. Sriraman completed her Ph.D. in Computer Science and Engineering at the University of Michigan.



Amy Babay

Assistant Professor

Department of Informatics  
and Networked Systems &  
Department of Computer  
Science,  
University of Pittsburgh

Amy Babay is an Assistant Professor in the School of Computing and Information at the University of Pittsburgh, where she leads the [Resilient Systems and Societies Lab](#). Her research interests are in distributed systems and computer networks, with particular interests in building dependable critical infrastructure systems and enabling new internet services with demanding performance requirements.



## Carlee Joe-Wong

Robert E. Doherty Career  
Development Professor

Electrical & Computer  
Engineering Department,  
Carnegie Mellon University

Carlee Joe-Wong is currently the Robert E. Doherty Associate Professor of electrical and computer engineering with Carnegie Mellon University. She received the A.B. degree (magna cum laude) in mathematics, and the M.A. and Ph.D. degrees in applied and computational mathematics, from Princeton University in 2011, 2013, and 2016, respectively. From 2013 to 2014, she was the Director of Advanced Research at DataMi, a startup she co-founded from her research on mobile data pricing. Her research interests lie in optimizing various types of networked systems, including applications of machine learning and pricing to distributed computing, mobile/wireless networks, and ridesharing networks. Her work has received several best paper and poster awards, and she received the NSF CAREER Award in 2018 and the ARO Young Investigator Award in 2019.



**Giulia Fanti**

Assistant Professor

Electrical & Computer  
Engineering Department  
Carnegie Mellon University

Giulia Fanti is an Assistant Professor of Electrical and Computer Engineering at Carnegie Mellon University. Her research interests span the security, privacy, and efficiency of distributed systems. She is a two-time fellow of the World Economic Forum's Global Future Council on Cybersecurity and a member of NIST's Information Security and Privacy Advisory Board. Her work has been recognized with several awards, including best paper awards, a Sloan Fellowship, an Intel Rising Star Faculty Award, and an ACM SIGMETRICS Rising Star Award. She obtained her Ph.D. in EECS from U.C. Berkeley and her B.S. in ECE from Olin College of Engineering.





## Henny Admoni

A. Nico Habermann  
Assistant Professor

Robotics Institute, Human-  
Computer Interaction  
Institute,  
Carnegie Mellon University

Dr. Henny Admoni is the A. Nico Habermann Assistant Professor in the Robotics Institute at Carnegie Mellon University, where she leads the Human And Robot Partners (HARP) Lab. Dr. Admoni's research interests include human-robot interaction, assistive robotics, and nonverbal communication. Dr. Admoni holds a PhD in Computer Science from Yale University, and a BA/MA joint degree in Computer Science from Wesleyan University.



Hoda Heidari

Assistant Professor

Machine Learning  
Department and Institute  
for Software, Systems, and  
Society,  
Carnegie Mellon University

I am an Assistant Professor at Carnegie Mellon University with joint appointments in the Machine Learning Department and the Institute for Software, Systems, and Society. I am also affiliated with the Human-Computer Interaction Institute, CyLab, and Block Center at CMU, and I co-lead the university-wide Responsible AI Initiative.

I am broadly interested in the Societal Aspects of Artificial Intelligence and Machine Learning. My work has been generously supported by the NSF Program on Fairness in AI in Collaboration with Amazon, PwC, CyLab, Meta, and J. P. Morgan.



Katherine Kosaian

PhD Student

Computer Science  
Department,  
Carnegie Mellon University

Katherine Kosaian is a final-year PhD candidate at Carnegie Mellon working with André Platzer. Her research is in the area of formal verification, and she is interested in formalizing highly mathematical algorithms that have safety-critical applications (where correctness is crucial). During her PhD, she interned with the NASA Formal Methods group. Before CMU, she attended the University of Maryland, College Park, where she earned a B.S. in mathematics and a B.S. in computer science. Outside of computer science, she has conducted research in various areas of pure mathematics including number theory, algebra, and signal processing.



Limin Jia

Research Professor

Electrical & Computer  
Engineering Department,  
Carnegie Mellon University

Dr. Jia is a Research Professor in the ECE Department at Carnegie Mellon University. Dr. Jia received her PhD in Computer Science from Princeton University. She received her BE in Computer Science and Engineering from the University of Science and Technology in China. Dr. Jia's research interests are in formal aspects of software security, in particular, applying formal logic to constructing software systems with known security guarantees.



Malihe Alikhani

Assistant Professor

Department of Computer  
Science,  
University of Pittsburgh

I am an Assistant Professor of Computer Science in the School of Computing and Information at the University of Pittsburgh. My primary research interests are in the fields of Natural Language Processing and Cognitive Science, with broader interests in Computational Social Sciences.

I work towards designing inclusive and equitable language technologies. This involves developing systems that can communicate and collaborate with diverse populations, especially those from underserved communities, for critical applications such as education, health, and social justice. I study how learning models might become biased, propose ways to mitigate such biases, and partner with educators, doctors, and community members to create inclusive technology-enabled experiences.





## Motahhare Eslami

Assistant Professor

Human-Computer  
Interaction Institute,  
Carnegie Mellon University

Motahhare Eslami is an assistant professor at the School of Computer Science, Human-Computer Interaction Institute (HCII), and Institute for Software Research (ISR), at Carnegie Mellon University. She earned her Ph.D. in Computer Science at the University of Illinois at Urbana-Champaign. Motahhare's research goal is to investigate the existing accountability challenges in algorithmic systems and to empower the users of algorithmic systems, particularly those who belong to marginalized communities or those whose decisions impact marginalized communities, make transparent, fair, and informed decisions in interaction with algorithmic systems. Motahhare's work has been recognized with a Google Ph.D. Fellowship, Best Paper Award and Honorable Mention Award at top-tier ACM conferences, and has been covered in mainstream media such as Time, The Washington Post, Huffington Post, the BBC, Fortune, and Quartz. Motahhare is named to the 100 Brilliant Women in AI Ethics, and her research is supported by NSF (Fairness in AI, Future of Work, and AI Institute), Amazon, Google, Facebook, and Cisco.



Nynke Niezink

Assistant Professor

Department of Statistics and  
Data Science,  
Carnegie Mellon University

I am an Assistant Professor of Statistics and Data Science at Carnegie Mellon University. My research focuses on the development of statistical methods for analyzing social science data. In particular, I am interested in questions related to statistical network analysis, including how to model social influence processes and how to learn about social behavior based on large-scale relational event data. Other interests include the development of statistical tools for digital humanities and digital democracy.



**Rana Zakerzadeh**

Assistant Professor

Department of Engineering,  
Duquesne University

Rana Zakerzadeh is an Assistant Professor of Engineering at Duquesne University, where she has been a faculty member since 2019. Professor Zakerzadeh's background is in the area of computational mechanics with a strong focus on biomedical engineering. She received her Ph.D. in the Computational Modeling and Simulation program at the University of Pittsburgh and completed a postdoctoral fellowship in the field of cardiovascular mechanics at the University of Texas at Austin. Her research is focused on developing biologically realistic mathematical-numerical models and answering clinically relevant questions in human phonation and the cardiovascular system. Dr. Zakerzadeh has mentored many undergraduate students on computational biomechanics-related projects, who have received research awards at the university and national level, attended and presented their work at several conferences, and have been co-authored in journal publications.



Rashmi K. Vinayak

Assistant Professor

Computer Science  
Department,  
Carnegie Mellon University

Rashmi Vinayak is an assistant professor in the Computer Science department at Carnegie Mellon University. Rashmi is a recipient of VMware Systems Research Award 2021, NSF CAREER Award 2020-25, Tata Institute of Fundamental Research Memorial Lecture Award 2020, Facebook Distributed Systems Research Award 2019, Google Faculty Research Award 2018, and Facebook Communications and Networking Research Award 2017. Her PhD thesis was awarded the UC Berkeley Eli Jury Dissertation Award 2016, and her work has received USENIX NSDI 2021 Community (Best Paper) Award, and IEEE Data Storage Best Paper and Best Student Paper Awards for the years 2011/2012. Rashmi received her Ph.D. from UC Berkeley in 2016 where she worked on resource-efficient fault tolerance for big-data systems, and was a postdoctoral scholar at UC Berkeley's AMPLab/RISELab from 2016-17. During her Ph.D. studies, Rashmi was a recipient of Facebook Fellowship 2012-13, the Microsoft Research PhD Fellowship 2013-15, and the Google Anita Borg Memorial Scholarship 2015-16. Her research interests broadly lie in computer/networked systems and information/coding theory, and the wide spectrum of intersection between the two areas. Her current focus is on robustness and resource efficiency in data systems. Key thrusts include storage and caching systems, systems for machine learning, and live streaming communication.



## Samantha Allen

Assistant Professor

Department of  
Mathematics,  
Duquesne University

Dr. Samantha Allen is an assistant professor of mathematics at Duquesne University. She got her PhD in mathematics at Indiana University. She also has B.S. degrees in both mathematics and computer science. Before joining Duquesne, she was a postdoctoral researcher at Dartmouth College and the University of Georgia.

Dr. Allen's research interests lie in the field of low-dimensional topology, the study of manifolds in dimensions up to four. More specifically, she studies knot theory in dimensions 3 and 4 and is particularly interested in using knot invariants arising from Heegaard Floer theory to study knot concordance, problems related to unknotting operations, and other knot-theoretic problems.





Sherry Sarkar

PhD Student

Algorithms, Combinatorics,  
Optimization Program,  
Mathematical Sciences,  
Carnegie Mellon University

I am a third year mathematics PhD student in the Algorithms, Combinatorics, Optimisation program at Carnegie Mellon University. I started my research career at Georgia Tech. Although I was majoring in CS, the majority of my research projects ended up being in math. Choosing between math and CS research proved to be a difficult task... which is why I chose CMU's Algorithms, Combinatorics, and Optimization (ACO) program for my PhD! Currently, my research focuses on combinatorial optimization, particularly in online or stochastic settings.



Theresa Anderson

Assistant Professor

Department of  
Mathematical Sciences,  
Carnegie Mellon University

Theresa C. Anderson is a mathematician and advocate, whose work in both areas centers around building new bridges.

She currently is an Assistant Professor of Mathematics at Carnegie Mellon University. Her mathematics lies in both harmonic analysis and number theory, and is funded by a National Science Foundation. In one instance, she uses analytic and algebraic tools to predict structure of random polynomials, which made major progress on a 100 year old conjecture in the area.

Her advocacy centers around underrepresented minorities, particularly people of color and women. Theresa is the 2006 Presidential Scholar from Wisconsin, received her undergraduate degree from UW-Madison in Spanish literature, Chemistry, and Mathematics, and her PhD from Brown in pure Mathematics. She is the mother of two little boys and hopes to encourage other women that one doesn't have to choose between career and family.



Victoria Dean

PhD Student

Robotics Institute, Carnegie  
Mellon University

Victoria Dean is a Ph.D. Candidate in the Robotics Institute at Carnegie Mellon University, a 2020 NSF Graduate Research Fellow, and a 2022 Siebel Scholar. She is passionate about teaching and mentoring undergraduate students, with an emphasis on improving diversity, equity, and inclusion. In research, she works on reinforcement learning and robotics and has advised several undergraduate researchers. Outside of computer science, she enjoys experimental baking, swing dancing, and knitting.



Yuejie Chi

Professor

Electrical & Computer  
Engineering Department,  
Carnegie Mellon University

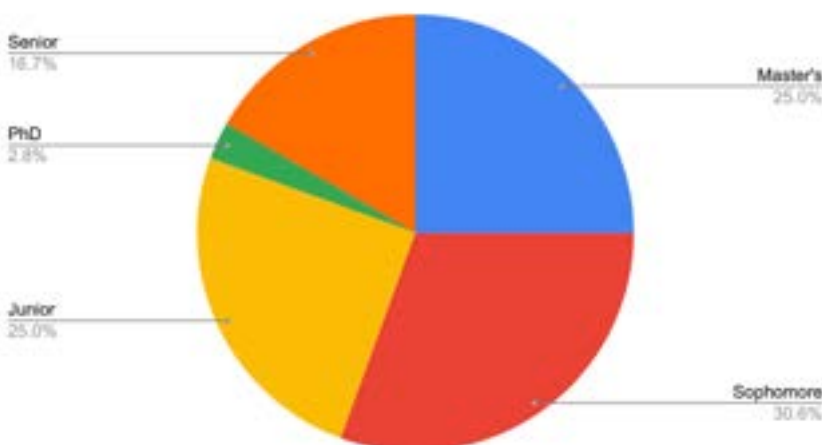
Dr. Yuejie Chi is a Professor in the department of Electrical and Computer Engineering, and a faculty affiliate with the Machine Learning department and CyLab at Carnegie Mellon University. She received her Ph.D. and M.A. from Princeton University, and B. Eng. (Hon.) from Tsinghua University, all in Electrical Engineering. Her research interests lie in the theoretical and algorithmic foundations of data science, signal processing, machine learning and inverse problems, with applications in sensing, imaging, decision making, and societal systems, broadly defined. Among others, Dr. Chi received the Presidential Early Career Award for Scientists and Engineers (PECASE) and the inaugural IEEE Signal Processing Society Early Career Technical Achievement Award for contributions to high-dimensional structured signal processing. She is an IEEE Fellow (Class of 2023) for contributions to statistical signal processing with low-dimensional structures.

# Participants



Aadyaa Maddi	Gaeun (Ella) Lee	Navodita Mathur	Shiyang
Amanda Perez	Gopika Geetha Kumar	Noelani Phillips	Thomas Garrison
Anastasiia Rudenko	Jack Liu	Priyanka Sarkate	Valerie Koester
Anya Bindra	Jiaying Wu	Priyanshi Garg	Veronica Bella
Arushi Sharma	Kristin Coffman	Raegan Gouker	Wen Hui Leng
Cynthia Wang	Lily Klucinec	Rebecca Green	Xiaohan Liu
Deepali Garg	Lisa Chen	Rishu Singh	Xinge Wang
Durwash Badr	Maria Yampolsky	Sanjna Ramesh	Yuhe Zheng
Emma Hayes	Mengrou Shou	Sharika Loganathan	Olivia Terry

## Attendee Grade Level and Disciplines





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# Call for Participants

## Inviting Participants

### For the inaugural Pittsburgh Women in Mathematics and Computing Symposium

- Faculty research presentations & undergrad opportunities
- Networking with faculty and students
- Professional development panels
- Free for all attendees

**FEB 24, 2023**

**Carnegie Mellon University**

Symposium website: [tinyurl.com/wmcs-agenda](https://tinyurl.com/wmcs-agenda)

Register here: [tinyurl.com/wmcs-register](https://tinyurl.com/wmcs-register)



*Funded by*

**IAS** | INSTITUTE FOR  
ADVANCED STUDY

Lisa Simonyi and the  
IAS Women and Mathematics Program

**Carnegie Mellon University**  
Electrical & Computer Engineering  
Diversity, Equity & Inclusion



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## Summary of Expenses

Item	Amount
Breakfast	\$605.6
Coffee/Tea	\$172.0
Lunch	\$921.9
Networking Sessions	\$336.1
Evening Reception (co-sponsored by CMU ECE)	\$2536.6

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## Conclusions

Carnegie Mellon University hosted the inaugural Pittsburgh Women in Mathematics and Computing Symposium on February 24, 2023. The event brought together 54 attendees from CMU, the University of Pittsburgh, and Duquesne University. The all-day symposium featured panel discussions designed to help students get started with research and learn how to apply to graduate programs, as well as faculty and graduate student presentations on their research. It also contained networking breaks that allowed the student attendees to connect with each other and interact with the faculty speakers in a relaxed setting.

The event received positive and encouraging feedback from attendees. One attendee remarked, "I got to interact with so many amazing women at CMU and Pitt, who are so passionately working towards their area of research. It was truly empowering to speak with them and learn about their personal experiences - hardships, failures, successes and much more. I would love to attend such events again in the future."

We thank the CMU ECE Diversity, Equity & Inclusion Committee, Lisa Simonyi, and the IAS Women and Mathematics Program for funding the symposium. We hope WMCS inspires future initiatives to build the community and capacity for providing timely mentorship, networks, and resources to empower more women to pursue math and computing-related studies.

# Gallery

