

EDUCATION

Carnegie Mellon University
PhD Machine Learning
 Advisor: Fei Fang

Pittsburgh, PA
 August 2023 -

University of Cambridge
MPhil Advanced Computer Science

Cambridge, England
 October 2022 - June 2023

University of Maryland
Bachelor of Science - Computer Science and Math, Magna Cum Laude

College Park, MD
 August 2018 - May 2022

EXPERIENCE

Amazon
Research Intern

Palo Alto, CA
 Summer 2025

World Resource Institute
Research Intern

Washington DC
 Spring 2022

MIT Lincoln Labs
Research Intern

Lexington, MA
 Summer 2021

Facebook
Software Engineering Intern

Menlo Park, CA
 Summer 2020

Software Engineering REU @ Carnegie Mellon
Research Intern

Pittsburgh, PA
 Summer 2019

PUBLICATIONS

Refereed Conference and Journal Publications

[J1] **Naveen Raman**, Mateo Espinosa, Juyeon Heo, Mateja Jamnik. Do Concept Bottleneck Models Obey Locality?. *Transactions on Machine Learning Research (TMLR)* 2025

[C8] Santiago Cortes-Gomez, **Naveen Raman**, Aarti Singh, Bryan Wilder. Data-driven Design of Randomized Control Trials with Guaranteed Treatment Effects. *International Conference on Machine Learning (ICML)* 2025

[C7] **Naveen Raman**, Holly Wiberg. Assortment Optimization for Matching Patients and Providers. *Machine Learning for Health (ML4H)* 2024

[C6] **Naveen Raman**, Ryan Shi, Fei Fang. Global Rewards in Restless Multi-Armed Bandits. *Conference on Neural Information Processing Systems (NeurIPS)* 2024

[C5] **Naveen Raman**, Mateo Espinosa Zarlenga, Mateja Jamnik. Understanding Inter-Concept Relationships in Concept-Based Models. *International Conference on Machine Learning (ICML)* 2024

[C4] Katherine M Collins, Matthew Barker, Mateo Espinosa Zarlenga, **Naveen Raman**, Umang Bhatt, Mateja Jamnik, Ilia Sucholutsky, Adrian Weller, Krishnamurthy Dvijotham. Human Uncertainty in Concept-Based AI Systems. *AAAI/ACM Conference on AI, Ethics, and Society (AIES)* 2023

[C3] **Naveen Raman**, Sanket Shah, John Dickerson. Data-Driven Methods for Balancing Fairness and Efficiency in Ride-Pooling. *International Joint Conference on Artificial Intelligence (IJCAI)* 2021

[C2] **Naveen Raman**, Minxuan Cao, Yulia Tsvetkov, Christian Kästner, Bogdan Vasilescu. Stress and burnout in open source: Toward finding, understanding, and mitigating unhealthy interactions. *International Conference on Software Engineering New Ideas and Emerging Results (ICSE NIER)* 2020

[C1] Guangqi Cui*, John Dickerson*, Naveen Durvasula*, William Gasarch*, Erik Metz*, Jacob Prinz*, **Naveen Raman***, Daniel Smolyak*, Sung Hyun Yoo*. A Muffin-Theorem Generator. *International Conference on Fun with Algorithms (FUN)* 2018

Refereed Workshop Papers and Extended Abstracts

[W3] **Naveen Raman**, Michael Yee. Improving Learning-to-Defer Algorithms Through Fine-Tuning. *Workshop on Human and Machine Decisions at NeurIPS* 2021

- [W2] Andrew Mao*, **Naveen Raman***, Matthew Shu, Eric Li, Franklin Yang, Jordan Boyd-Graber. Eliciting Bias in Question Answering Models through Ambiguity. *Machine Reading for Question Answering at EMNLP 2021*
- [W1] **Naveen Raman**, Pedro Rodriguez, Jordan Boyd-Graber. What more can Entity Linking do for Question Answering?. *Human And Machine in-the-Loop Evaluation and Learning Strategies at NeurIPS 2020*

Preprints and Working Papers

- [P4] Gao Mo*, **Naveen Raman***, Megan Chai, Cindy Peng, Shannon Pagdon, Nev Jones, Hong Shen, Peggy Swarbrick, and Fei Fang. PeerCoPilot: A Language Model-Powered Assistant for Behavioral Health Organizations.
- [P3] Megan Chai*, Cindy Peng*, Gao Mo, **Naveen Raman**, Shannon Pagdon, Fei Fang, Nev Jones, Peggy Swarbrick, and Hong Shen. Large Language Models in Peer-Run Community Behavioral Health Services: Understanding Peer Specialists and Service Users' Perspectives on Opportunities, Risks, and Mitigation Strategies.
- [P2] Ariana Tang, **Naveen Raman**, Fei Fang, and Ryan Shi. Contextual Budget Allocation for Food Rescue Volunteer Engagement.
- [P1] **Naveen Raman**, Ryan Shi, Sean Hudson, Ameesh Kapoor, and Fei Fang. An Extended Study on Restless Multi-Armed Bandits with Global Rewards.

HONORS AND AWARDS

NeurIPS Top Reviewer	2024
ICML Travel Grant (declined)	2024
University of Maryland Undergraduate Researcher of the Year	2022
National Science Foundation Graduate Reserach Fellowship (GFRP)	2022
Churchill Scholarship (fully funded Cambridge MPhil)	2022
CRA Undergraduate Researcher of the Year Finalist	2021
Phillip Merrill Presidential Scholar	2021
Barry Goldwater Scholarship	2021
Brendan Iribe Scholarship (full tuition scholarship)	2020
President's Scholarship (4-year scholarship)	2018

PROFESSIONAL SERVICE

Conference Reviewing

Main Conference: NeurIPS (2022,2023, Top Reviewer 2024, 2025), AAAI (2025), ICML (2024,2025), AAMAS (2024), COLING (2022), AISTATS (2025), EAAMO (2025), CHIL (2025)
Workshop: ICML Actionable Interpretability (2025)

Organizing

MLC Nigeria *Volunter Assistant* October 2023 - Present
Machine Learning for Health *Roundtable Chair* December 2024

Department Service

Machine Learning Department *Masters Admissions Committee* November 2024 - May 2025
Machine Learning Blog *Blog Editor* August 2024 - Present
Machine Learning Department *Social Committee* October 2023 - May 2024

Mentorship

School of Computer Science *Graduate Application Support Program* October 2023 - Present
School of Computer Science *Tech Nights* October 2023 - December 2023
School of Computer Science *AI Mentorship Program* October 2023 - December 2023
Student Community Action *Big Sibling* October 2022- May 2023
Maryland Mentors Program *Math and Reading Tutor* September 2020-May 2022
College Park Academy *Academic Volunteer* September 2018-May 2021
College Mentors for Kids *Mentor* January 2021 - May 2021

TALKS

Assortment Optimization for Patient-Provider Matching

Marketplace Innovations Workshop

Udell Group at Stanford University

PeerCoPilot: A Language-Model Assistant for Behavioral Health Organizations

Carnegie Mellon FEAT Reading Group

AI for Social Impact

Global Rewards in Restless Multi-Armed Bandits

Food Rescue Conference

University of Maryland Multi-Agent RL Group

Carnegie Mellon Econ-CS Reading Group

Multi-Agent Learning Seminar

EAAMO Urban Data Science Working Group

Inter-Concept Learning Relationships

Gordon Conference on Cancer Genetics

TEACHING

Teaching Assistant

Organization of Programming Languages (CMSC330), UMD Fall 2019 - Spring 2022 Introduction to Programming via the Web (CMSC122), UMD Spring 2019

Course Facilitator

Algorithms for Interviews (CMSC389O), UMD Spring 2020 - Spring 2022