

Naveen Raman

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EDUCATION

Carnegie Mellon University

PhD Machine Learning

Advisor: Fei Fang

Pittsburgh, PA

August 2023 -

University of Cambridge

MPhil Advanced Computer Science

Graduated with Distinction

Cambridge, England

October 2022 - June 2023

University of Maryland

Bachelor of Science - Computer Science and Math, High Honors

GPA: 3.97, Magna Cum Laude

College Park, MD

August 2018 - May 2022

PUBLICATIONS

Full Papers

Assortment Optimization for Matching Patients and Providers

ML4H Findings 2024

Naveen Raman, Holly Wiberg

Global Rewards in Restless Multi-Armed Bandits

NeurIPs 2024

Naveen Raman, Ryan Shi, Fei Fang

Understanding Inter-Concept Relationships in Concept-Based Models

ICML 2024

Naveen Raman, Mateo Espinosa Zarlenga, Mateja Jamnik

Human Uncertainty in Concept-Based AI Systems

AIES 2023

Katherine M Collins, Matthew Barker, Mateo Espinosa Zarlenga, Naveen Raman, Umang Bhatt, Mateja Jamnik, Iliia Sucholutsky, Adrian Weller, Krishnamurthy Dvijotham

Data-Driven Methods for Balancing Fairness and Efficiency in Ride-Pooling

IJCAI 2021

Naveen Raman, Sanket Shah, John Dickerson

Stress and burnout in open source: Toward finding, understanding, and mitigating unhealthy interactions

ICSE NIER 2020

Naveen Raman, Minxuan Cao, Yulia Tsvetkov, Christian Kästner, Bogdan Vasilescu

A Muffin-Theorem Generator

FUN 2018

Guangqi Cui*, John Dickerson*, Naveen Durvasula*, William Gasarch*, Erik Metz*, Jacob Prinz*, Naveen Raman*, Daniel Smolyak*, Sung Hyun Yoo*

Workshop Papers

Do Concept Bottleneck Models Obey Locality?

Workshop on the Future of XAI at NeurIPs 2023

Naveen Raman, Mateo Espinosa, Juyeon Heo, Mateja Jamnik

Improving Learning-to-Defer Algorithms Through Fine-Tuning

Workshop on Human and Machine Decisions (WHMD) at NeurIPS 2021

Naveen Raman, Michael Yee

Eliciting Bias in Question Answering Models through Ambiguity

Machine Reading for Question Answering (MRQA) at EMNLP 2021

Andrew Mao*, Naveen Raman*, Matthew Shu, Eric Li, Franklin Yang, Jordan Boyd-Graber

What more can Entity Linking do for Question Answering?

Human And Machine in-the-Loop Evaluation and Learning Strategies (HAMLETS) at NeurIPS 2020

Naveen Raman, Pedro Rodriguez, Jordan Boyd-Graber

Under Review

An Extended Study on Restless Multi-Armed Bandits with Global Rewards

Naveen Raman, Ryan Shi, Sean Hudson, Ameesh Kapoor, and Fei Fang

Data-driven Design of Randomized Control Trials with Guaranteed Treatment Effects

Santiago Cortes-Gomez, **Naveen Raman**, Aarti Singh, Bryan Wilder

PROFESSIONAL SERVICE

Machine Learning Department <i>Masters Admissions Committee</i> Organized social events and ML Tea	November 2024 - Present
Machine Learning Blog <i>Blog Editor</i> Organized ML Blog and edited blogposts	August 2024 - Present
School of Computer Science <i>Graduate Application Support Program</i> Assisting applicants to PhD programs with statement of purpose + resume by giving feedback and edits	October 2023 - Present
Machine Learning Department <i>Social Committee</i> Organized social events and ML Tea	October 2023 - May 2024
School of Computer Science <i>Tech Nights</i> Volunteered to teach computer science topics to local middle school girls	October 2023 - December 2023
School of Computer Science <i>AI Mentorship Program</i> Working with undergraduate students interested in AI research by teaching them fundamentals of research and giving them guidance	October 2023 - December 2023
Student Community Action <i>Big Sibling</i> Matched up and met weekly with local elementary school students in Cambridge	October 2022- May 2023
Maryland Mentors Program <i>Math and Reading Tutor</i> Tutored elementary school students one-on-one in reading and math	September 2020-May 2022
College Park Academy <i>Academic Volunteer</i> Assisted with various after school programs at local charter school, including cybersecurity, homework help, and college application assistance	September 2018-May 2021
College Mentors for Kids <i>Mentor</i> Met weekly with middle school students to provide advice and tutoring	January 2021 - May 2021
Reviewing: NeurIPS (2022,2023, Top Reviewer 2024), AAAI (2025), ICML (2024), AAMAS (2024), COLING (2022), AISTATS (2025)	

TALKS

Global Rewards in Restless Multi-Armed Bandits

Food Rescue Conference

University of Maryland Multi-Agent RL Group

Inter-Concept Learning Relationships

Gordon Conference on Cancer Genetics

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

TEACHING

Teaching Assistant: Programming Languages, University of Maryland

Taught Ruby, Rust, and Functional Programming to UMD undergraduates (Fall 2019-Spring 2022)

Head Course Facilitator: Algorithms for Interviews, University of Maryland

Developed and taught student-run class on algorithms for coding interviews (Spring 2020-Spring 2022)

Teaching Assistant: Web Development, University of Maryland

Taught HTML and Javascript to non-CS major students at UMD (Spring 2019)

EXPERIENCE

Carnegie Mellon University *Research Assistant*

September 2023-Present

- Developing notification algorithms for food rescue tasks through improved bandit algorithms
- Developing assortment algorithms to match patients with providers

University of Maryland *Research Assistant*

May 2018-May 2022

- Developed matching algorithms for rideshare applications that balanced fairness and profit
- Collected and analyzed data for entity linking algorithms to improve question answering performance

MIT Lincoln Labs *Research Intern*

May 2021-August 2021

- Extended learning-to-defer algorithms for heterogeneous experts using semi-supervised learning

World Resource Institute *Electric School Bus Intern*

February 2022-May 2022

- Analyzed and collected data on school bus depot locations through web scraping and data science techniques, making it clearer how to transition from gas to electric school busses

Facebook *Software Engineering Intern*

May 2020-August 2020

- Developed full stack web application using React+Hack to debug issues with ranking models, and shipped code into production after rounds of UI testing

Carnegie Mellon University *Research Intern*

May 2020-August 2020

- Investigated toxic and rude language in Github communities by developing a toxicity detector which was used to analyze trends across communities and timespans