Naveen Durvasula

Undergraduate at University of California, Berkeley

(+1) 240-888-5450 | ndurvasula@berkeley.edu | ndurvasula.com | ndurvasula | naveen-durvasula

Summary

I'm an undergraduate at the University of California, Berkeley. My research interests lie broadly at the intersection of economics, optimization, and statistics. In particular, I am interested in problems relating to mechanism and market design, and I hope to develop theoretical foundations that can be readily used to improve and inform the design of real-world markets.

Education

University of California, Berkeley — *Berkeley, CA*

B.S. in Electrical Engineering and Computer Science / B.S. in Business Administration | GPA: 4.00/3.958 — *2019 - 2023*

Relevant Coursework: Graduate Probability/Measure Theory (A+), Graduate Algorithms (A+), Graduate Algorithmic Game Theory (A+), Graduate Sketching Algorithms (A), Graduate Algebra (A), Machine Learning (A+), Variational Methods (A+)

Montgomery Blair High School — *Silver Spring, MD*

Diploma | Science, Mathematics, and Computer Science Magnet Program — *2015 - 2019*

Selected Honors & Awards

2021 **Barry Goldwater Scholar**

2019 **ACM/CSTA Cutler-Bell Prize for High School Computing** — *Phoenix, AZ*

2018 **Research Science Institute Scholar** — *Cambridge, MA*

Publications

Learning Competitively Monotone Auctions Online.

Working paper.

Naveen Durvasula, Manolis Zampetakis, and Nika Haghtalab

Calibrating your Expectations.

Working paper.

Kweku Kwegyir-Aggrey and Naveen Durvasula

Greedy Policies in Selection Problems.

Working paper.

Naveen Durvasula

Stochastic Minimum Vertex Cover in General Graphs: a 3/2-Approximation.

Manuscript under submission to STOC 2023.

Mahsa Derakshan, Naveen Durvasula, and Nika Haghtalab

Forecasting Patient Outcomes in Kidney Exchange.

Proceedings of the Thirty-First International Joint Conference on Artificial Intelligence.

Naveen Durvasula, Aravind Srinivasan, and John Dickerson

Recommending with Recommendations.

Preprint.

Naveen Durvasula*, Franklyn Wang*, and Scott Duke Kominers

Utility-Based Communication Requirements for Stable Matching in Large Markets.

Preprint.

Naveen Durvasula and Scott Duke Kominers

Extending Universal Approximation Guarantees.

Preprint.

Naveen Durvasula

A Muffin-Theorem Generator.

Proceedings of the Ninth International Conference on Fun with Algorithms.

Guangiqi Cui, John Dickerson, Naveen Durvasula, William Gasarch, Erik Metz, Jacob Prinz, Naveen Raman, Daniel Smolyak, Sung Hyun Yoo ($\alpha - \beta$)

Talks

Characterizing Anomalies with Explainable Classifiers.

Presented at the DistShift and DMML Workshops at NeurIPS '22.

Naveen Durvasula, Valentine d'Hautville, Keegan Hines, John Dickerson

Forecasting Patient Outcomes in Kidney Exchange.

Presented at the Special Track on AI for Social Good at IJCAI '22.

Naveen Durvasula, Aravind Srinivasan, and John Dickerson

Recommending with Recommendations.

Presented at the Seventh Marketplace Innovation Workshop.

Naveen Durvasula, Franklyn Wang, and Scott Duke Kominers

A Bayesian Optimization Approach to Estimating Expected Match Time and Organ Quality in Kidney Exchange.

Presented at the AI for Public Health Workshop at ICLR '21.

Naveen Durvasula, Aravind Srinivasan, and John Dickerson

The Muffin Problem.

Presented at FUN '18, G4G13, and the 2018 Joint Mathematics Meetings of the AMS and MAA.

Guangiqi Cui, John Dickerson, Naveen Durvasula, William Gasarch, Erik Metz, Jacob Prinz, Naveen Raman, Daniel Smolyak, Sung Hyun Yoo ($\alpha - \beta$)

Industry Experience

Arthur AI — *New York, NY*

Research Intern — *Summer 2022*

- Developed a state-of-the-art explainable anomaly detection system, which has since been moved to production
- Analyzed and identified flaws in industry-standard approaches for detecting bias in deployed ML models
- Studied the long-term effects of using greedy training policies for models used in selection problems (e.g. lending models, fraud detection, etc.)

QuantCo — *Boston, MA || Berlin, Germany*

Causal Inference Intern — *Summer 2021*

- Analyzed the effects COVID-19 on deployed models used by the second-largest health insurer in Germany for detecting cases of medical malpractice
- Created a process for optimally balancing insurance claims handling between automated models and human claims handlers for the same client
- Developed tools for automatically improving model performance (e.g. Bayesian-optimization-based hyperparameter tuning)

Summer Stem Institute

Head Teaching Assistant — *Summer 2020*

- Co-wrote an applied statistics course that was broadcast to hundreds of students around the world

Skills

Computer/Software/Programming Languages — Python, Java, C#, C++, JavaScript/HTML, LaTeX, Linux, Arduino, Git, Unity3D

Spanish – earned the Maryland Seal of Biliteracy, Telugu