Naveen Durvasula

Undergraduate at University of California, Berkeley

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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