Avni Kothari

avni510.github.io
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Education

University of California, San Diego — 2021 – Present
M.S. in Computer Science — GPA: 3.74/4.00
Thesis: Foundations for Model-Agnostic Recourse Verification
Advisors: Berk Ustun & Lily Weng
Coursework: Machine Learning; Recommender Systems; Neural Networks & Pattern Recognition; Convex Optimization; Statistical NLP; Probabilistic Reasoning & Learning; Networking Systems

University of Texas at Austin — 2011 – 2016
B.A. in Mathematics & B.A. in Economics — GPA: 3.72/4.00
Minor in Computer Science
Coursework: Databases; Programming Languages; Software Design; Real Analysis; Number Theory; Discrete Mathematics; Differential Equations; Linear Algebra & Matrix Theory; Econometrics

Research Interests

Machine Learning, Algorithmic Fairness, Algorithmic Recourse, Privacy, Interpretability, Natural Language Processing, Auditing, Adversarial Robustness, Deep Learning, Uncertainty Quantification

Awards

DeepMind Fellow (Article) — 2021 – 2023
University Honors — 2011 – 2014

Papers

Prediction without Preclusion: Recourse Verification with Reachable Sets
Avni Kothari, Bogdan Kulynych, Lily Weng, Berk Ustun
In Submission, 2023

Work Experience

Edovo; *Chicago, IL* — Jan. 2020 – May 2021
Software Engineer
- Designed and developed an educational content platform to handle 700K+ requests per day
- Created a pipeline and nightly job to merge 4 billion rows of user event data in PostgreSQL
- Spearheaded team sessions to improve software development practices and adopt new frameworks

8th Light; *Chicago, IL* — Aug. 2017 – Mar. 2019
Lead Software Engineer
- Developed a diabetes management iOS app to connect patients with diabetic nurse specialists
- Enhanced a Java-based continuous deployment pipeline, seamlessly integrating with internal tools
- Mentored peers and residents through pair programming sessions and code reviews

Resident Apprentice — Jan. 2017 – Aug. 2017
- Created games and applications with a focus on Test Driven Development and SOLID Design
- Created an HTTP Server in Java without libraries for app deployment
- Gave company-wide talks on "Hashing Functions" and "Fun with Prime Numbers"

Teaching Experience

Interpretability & Explainability in Machine Learning; *UC San Diego* — Sept. 2022 – Dec. 2022
Course taught by: Berk Ustun
Supported instruction for 30+ MS/PhD students in an introductory research course.

Differential Calculus Tutor; *UT Austin* — May 2011 – Aug. 2013
Tutored undergraduates on limits, Riemann sum, continuity, derivatives, and differentiation rules

Service

PenPal for the Incarcerated — Sept. 2020 – Present
Correspond biweekly through letters and video chats with an incarcerated individual

The Recyclery; *Chicago, IL* — Aug. 2018 – May 2021
Drafted annual budget for a bike shop with 200+ customers, and assisted with repairs

Skills & Interests

Software: Python, Java, Swift, Javascript, AWS, Elasticsearch, Elixir, SQL, Terraform
Libraries: Pytorch, CPLEX, Numpy, Pandas, Sklearn, Redux, React
Interests: Cycling, Gardening, Knitting, Hiking, Swimming, Fiction