Abhay Singh

as2626@cornell.edu (404) 353-0477

education

Cornell University, Ithaca, NY
M.S. in Computer Science, Minor in Applied Mathematics — Aug 2021 – May 2023
Advisor: Anil Damle
GPA: 4.04/4.30

B.S. in Computer Science (Honors), *Summa Cum Laude* — Aug 2018 – May 2021
Advisor: Austin Benson
GPA: 4.14/4.30

selected coursework

Convex Analysis, Statistical Principles, Matrix Computations, Numerical Methods, Linear Models, Statistical Learning Theory, Probability, Algorithms, Network Theory, Machine Learning, Compilers

preprints & publications

Edge Proposal Sets for Link Prediction (preprint)
Abhay Singh, Qian Huang, Sijia Linda Huang, Omkar Bhalerao, Horace He, Ser-Nam Lim, Austin Benson

Combining Label Propagation and Simple Models Out-performs GNNs (ICLR 2021)
Qian Huang, Horace He, Abhay Singh, Ser-Nam Lim, Austin Benson

Better Set Representations For Relational Reasoning (NeurIPS 2020)
Qian Huang, Horace He, Abhay Singh, Yan Zhang, Ser-Nam Lim, Austin Benson

professional experience

Citadel, Global Quantitative Strategies, Chicago, IL
Incoming Quantitative Research Analyst — Aug 2023 –
- Portfolio Optimization Team

Quantitative Research Intern — June 2022 – Aug 2022
- Portfolio Prediction

Software Engineering Intern — June 2021 – Aug 2021
- Portfolio Optimization Robustness and Latency

Yext, New York, NY
Software Engineering Intern — June 2020 – Aug 2020
- Application Security & Code Vulnerability

Morgan Stanley, New York, NY
Technology Summer Analyst — June 2019 – Aug 2019
- Efficient Data Pipelines

teaching experience

Guest Lecturer
CS 4850: Mathematical Foundations of Data Science — March 2022

Head Teaching Assistant
CS 6210: Matrix Computations, CS 4850: Mathematical Foundations of Data Science,
CS 4820: Introduction to Analysis of Algorithms, CS 4780: Introduction to Machine Learning

service & leadership

Cornell University Artificial Intelligence
Co-President — Aug 2021 – May 2022

Reviewer:
ICML 2022, ICLR 2022, NeurIPS 2021

projects

Prediction Correlation via Graph Inference
- Improved predictive performance by learning a graph topology underlying a set of data points

1-Lipschitz Deep Equilibrium Models
- Enforced uniqueness and existence of fixed-point solution from root-finding neural network

Few-Shot Instance Segmentation
- Designed architecture to perform proposal-free few-shot instance segmentation

Continual Learning with Lottery Tickets
- Demonstrated effectiveness of novel training scheme to resist catastrophic forgetting

Xi Compiler
- Wrote optimized compiler to emit x86 assembly instructions, includes dataflow analysis and non-trivial register allocation; ∼10,000 lines of code