Abhay Singh

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education	**Cornell University**, Ithaca, NY

Cornell University, Ithaca, NY
M.S. in Computer Science   Aug 2021 – May 2023
Advisor: Anil Damle
GPA: 4.00/4.30

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

coursework

Matrix Computations, Convex Analysis, Numerical Methods, Probability, Algorithms, Network Theory, Computer Vision, Statistical Distances, Machine Learning, Real Analysis, Linear Algebra, Compilers

preprints & publications

Edge Proposal Sets for Link Prediction 📄 ⭘   (under submission)
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
Quantitative Research Intern (Incoming)   June 2022 – Aug 2022
  - Portfolio Optimization Team
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 4850: Mathematical Foundations of Data Science   Jan 2022 – May 2022
CS 4820: Introduction to Analysis of Algorithms   Aug 2021 – Dec 2021
CS 4780: Introduction to Machine Learning   Aug 2020 – May 2021

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 nontrivial register allocation; ∼10,000 lines of code