Abhay Singh

as2626@cornell.edu (404) 353-0477

education

Cornell University, Ithaca, NY
M.S. in Computer Science — Aug 2021 – May 2023
Advised by Anil Damle

B.S. in Computer Science (Honors), *Summa Cum Laude* — Aug 2018 – May 2021
Advised by Austin Benson

coursework

Numerical Methods (Graduate), Probability (Graduate), Statistical Distances (Graduate), Algorithms (Graduate), Network Theory (Graduate), Computer Vision (Graduate), 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
Incoming Quantitative Research Intern — 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 — May 2020 – Aug 2020
- Application Security & Code Vulnerability

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

teaching experience

CS 4820: Introduction to Analysis of Algorithms
Head Teaching Assistant, Cornell University — Aug 2021 - Dec 2021
Teaching Assistant, Cornell University — Aug 2019 - Dec 2019

CS 4780: Introduction to Machine Learning
Head Teaching Assistant, Cornell University — Aug 2020 - May 2021

service & leadership

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

Reviewer:
ICLR 2022, NeurIPS 2021

projects

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