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, 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

Citadel, Global Quantitative Strategies, Chicago, IL
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

projects

1-Lipschitz Deep Equilibrium Models
- Enforce 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 in Scala for language Xi, in team of 4; approximately 10,000 lines of code
- Includes lexing, parsing, type-checking, intermediate code generation, various optimizations including dataflow analysis, and emitting assembly instructions with non-trivial register allocation

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: NeurIPS 2021, ICLR 2022