## Abhay Singh

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

Numerical Methods (Graduate), Probability (Graduate), Statistical Distances (Graduate), Algorithms coursework

(Graduate), Network Theory (Graduate), Computer Vision (Graduate), Machine Learning, Real Analysis,

Linear Algebra, Compilers

preprints & publications Edge Proposal Sets for Link Prediction A (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

Cornell University Artificial Intelligence service & leadership

Co-President Aug 2021 - May 2022

Reviewer: NeurIPS 2021, ICLR 2022