










education	Cornell University, Ithaca, NY		
	M.S. in Computer Science		Aug 2021 – May 2023
	B.S. in Computer Science (Honors), <i>Summa Cum Laude</i> , GPA: 4.14/4.30		Aug 2018 – May 2021
coursework † = head teaching assistant	CS 6241: Data Science Numerics	ECE 6970: Statistical Distances	CS 6670: Computer Vision
	ORIE 6510: Probability	CS 4780: Machine Learning †	CS 4820: Algorithms †
	MATH 4130: Analysis I (Honors)	MATH 4315: Linear Algebra	CS 4850: Math Foundations
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		
	Software Engineering Intern, Portfolio Optimization Team		June 2021 – Aug 2021
	<ul style="list-style-type: none"> Deployed statistical monitoring tool to assess data quality and detect anomalies in a variety of inputs used in formulated portfolio optimization problem Built framework to efficiently study a large collection of optimization problems, used by researchers to improve solution robustness and latency in portfolio optimization 		
	Yext, New York, NY		
	Software Engineering Intern		May 2020 – Aug 2020
	<ul style="list-style-type: none"> Designed and integrated static code analysis tool used firm-wide on over 80% of codebase to scan vulnerable Java code at compile-time Wrote multi-threaded Golang script to determine unprotected customer apps that downloads and parses terabytes of API log data on-the-fly via AWS S3, and makes remote-procedure calls to fetch app data by API key; improved performance by 8x relative to previous solution Integrated webhooks to automate modification of company repository permissions using Github's REST API, notifying teams automatically via Slack and email 		
	Morgan Stanley, New York, NY		
	Technology Summer Analyst		June 2019 – Aug 2019
	<ul style="list-style-type: none"> Architected and implemented end-to-end data pipeline to process and analyze over 800,000,000 entries of financial data daily with highly optimized, parallelized Python scripts, using NumPy and Pandas Reduced mainframe consumption by 90%, from 5000 to 500 CPU-seconds, saving tens of millions of dollars in annual costs Created and deployed firm-wide DevOps web tool to analyze large text-based datasets 		
projects	1-Lipschitz Deep Equilibrium Models 		
	<ul style="list-style-type: none"> Presented method to enforce uniqueness and existence of a fixed point solution in a neural network representing an iterative solver, which is done by constraining 1-Lipschitzness of the model 		
	Few-Shot Clustering Instance Segmentation (FS-CIS) Net 		
	<ul style="list-style-type: none"> Designed novel model architecture to perform proposal-free few-shot instance segmentation in autonomous driving scenarios, speeding up inference with comparable performance to existing methods 		
	Continual Learning with Lottery Tickets 		
	<ul style="list-style-type: none"> Proposed and demonstrated effectiveness of novel training scheme to resist catastrophic forgetting, a phenomena in which a model overfits to the most recently seen data in a multi-task learning setting 		
	Xi Compiler		
	<ul style="list-style-type: none"> 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 		
languages & technologies	Python, Java, OCaml, Scala, Go, Julia, C/C++, Bash, JavaScript, SQL PyTorch, Keras/TensorFlow, Git, Jupyter, Docker, Bazel, Gradle, Terraform		