

Bhargav Samineni

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EDUCATION

The University of Texas at Austin

Austin, TX

M.Sc. in Computer Science | GPA: 3.9/4.0

Aug 2023 – May 2025

- Coursework: Algorithms and Complexity, Machine Learning, Matrix Algorithms for Big Data

New Jersey Institute of Technology

Newark, NJ

B.Sc. in Computer Science and Mathematical Sciences | GPA: 4.0/4.0

Sep 2019 – May 2022

EXPERIENCE

Pacific Northwest National Laboratory

Richland, WA

Research Intern

Jun 2024 – Aug 2024

- Researched how to augment algorithms for coverage problems in data streaming settings with machine learned predictions to get beyond worst-case guarantees.

Research Intern | Paper: [arXiv](#) (Accepted to ESA 2024)

Aug 2022 – Jun 2023

- Developed and implemented new auction-based parallel algorithms for the bipartite Max Weight b -Matching problem in C++ with applications in resource allocation and recommendation problems.
- Developed and implemented space efficient algorithms in data streaming settings for the k -Disjoint Matching problem in C++ with applications in reconfigurable datacenter topologies. Our algorithms required on average $16\times$ less memory, were $6\times$ as fast, and gave comparable solution quality to state-of-the-art algorithms.

Department of Computer Science, UT Austin

Austin, TX

Graduate Research

Jan 2024 – May 2024

- Researched optimal graph spanner construction algorithms in modern distributed computation models with applications to shortest path problems.

Department of Computer Science, NJIT

Newark, NJ

Undergraduate Research | Paper: [arXiv](#) (Best Paper Award at WALCOM 2023)

Jan 2020 – May 2022

- Proved NP-Hardness of and developed approximation algorithms for maximizing task throughput in a novel scheduling problem motivated by batteryless IoT devices.

AMD/Institute for Pure and Applied Mathematics, UCLA

Los Angeles, CA

Research Intern | Paper: [PDF](#) (Accepted to ML4PS@NeurIPS 2021)

Jun 2021 – Aug 2021

- Worked in a team of 5 to research physically informed neural networks (PINNs) and their ability to act as surrogate models to traditional numerical simulators by extrapolating physical processes.
- Implemented PINNs using TensorFlow to model and extrapolate acoustic wave propagation and experimentally validated that they reduced extrapolation error by $10\times$.

Sagitec Solutions

Sacramento, CA

Jr. Software Engineer Intern

Jun 2020 – Aug 2020

- Supported the project codebase by fixing over 60 bug reports and refactoring code using C# and SQL.
- Developed various functionalities based on client specifications for user web portals using JavaScript.

PROJECTS

Implementing L_p Samplers

GitHub: 🐙

- A memory-efficient C++ implementation of probabilistic L_p samplers in the data stream setting for $p \in \{1, 2\}$ that samples elements of a dynamically updating frequency vector according to its L_p distribution.

Learning Diffusion Probabilities from Cascades

GitHub: 🐙

- Developed a GNN architecture to learn the edge probabilities of Independent Cascade diffusion models on networks from training cascades and compared it against prior statistical methods. Built with PyTorch Geometric.

TECHNICAL SKILLS

Languages: Python, C++, Bash

Libraries/Frameworks: NumPy, Matplotlib, PyTorch

Other: Git, Linux, \LaTeX

Technical: Discrete Optimization, Approximation Algorithms, Graph Theory, Graph Neural Networks