Tanvi Karandikar

tkarandi@cs.cmu.edu | +1 412 886 7303 | LinkedIn | GitHub | Personal Webpage | Google Scholar

Education

Carnegie Mellon University — Pittsburgh, PA
Master's in Computational Data Science (Systems Track) — Aug 2022 - Dec 2023

International Institute of Information Technology — Hyderabad, India
B. Tech (Honors) in Computer Science and Engineering, CGPA – 9.63/10 — July 2018 - June 2022
Dean's List Award for Academic Excellence (all semesters), Batch Best All Rounder

Technical Skills

Languages: C, C++, C#, SQL, JavaScript, Python, MATLAB, Bash, HTML/CSS
Tools/Frameworks: MongoDB, Git, Blender, Unity, OpenGL, CUDA, PyTorch, Pandas, NumPy, React, d3 JS, Latex

Selected Coursework

(* denotes in-progress)

CS: Data Structures and Algorithms, Networks, OS, Compilers, Data Systems, Distributed Systems, Cloud Computing*
AI and Optimization: Statistical Methods in AI, Optimization Methods, Machine Learning

Projects

Relational Database | C++ — Fall 2021
• Developed a relational database in C++ that supports assignment and non assignment queries, indexing using B+ trees, and sorting using 2-phase merge sort.

Compiler for Racket Programs | Racket — Spring 2022
• Implemented a nanopass compiler to compile Racket programs to x86-64, with support for functions and conditionals.

Multithreading Simulations | C — Fall 2019
• Simulated a cab booking and college mess systems using mutex locks, semaphores and process synchronization.

Linux Shell | C — Fall 2019
• Implemented a command line interface based on the Unix Bash shell with multiple commands per line, signal handling, and chained redirection and piping.

Custom Video Games — Spring 2021
• Designed and coded a third person shooter game with custom 3D models in WebGL and created a cinematic trailer. Also coded an escape game in OpenGL with a procedural maze including obstacles, and rewards.

Experience

Adobe Research — Bangalore, India (Remote)
Research Intern — May 2021 - Aug 2021
• Designed and built a novel end-to-end system that leveraged question-answering and topic-modelling to provide personalised non-linear consumption of an input financial report. Led to a publication, and a patent being filed.

Research Projects

Honors Research Student at **Precog, IIIT-Hyderabad** under Dr. P Kumaraguru — May 2020 - May 2022
• Characterized and classified different classes of users on Twitter during Indian elections. Two publications.
• Analysed India's COVID-19 vaccination drive and identified inequities against the rural population.

Independent Study at **Robotics Research Center, IIIT-Hyderabad** under Dr. KM Krishna — Dec 2020 - Dec 2021
• Developed a synthetic data generation pipeline with domain randomisation for simulation-to-real transfer for multi-layered scene layout estimation in warehouse settings. One publication.

Selected Publications

DynamicTOC: Persona-based Table of Contents for Consumption of Long Documents — NAACL 2022
Monocular Multi-Layer Layout Estimation for Warehouse Racks — ICVGIP 2021
“I'll be back”: Examining Restored Accounts On Twitter — WI-IAT 2021