Raayan Brar

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Education

University of Michigan - GPA: 3.87 — Ann Arbor, MI
M.S.E. in Computer Science — Graduating May 2025
B.S. in Computer Science, Minors in Electrical Engineering, Mathematics — Aug 2021 - May 2024
Relevant Coursework:
Data Structures & Algorithms, Operating Systems, Computer Architecture, Computer Networks, Web Systems

Experience

Uber — Software Engineer Intern — May 2024 - August 2024
- Implemented and unit-tested algorithm to optimize service and reduce memory usage using Go
- Achieved a 29% reduction in memory usage leading to significant cost savings and improved system efficiency
- Deprecated distributed lock manager system and migrated to Redis-based distributed lock implementation
- Migration resulted in compute cost savings and boosted system performance

Uber — Software Engineer Intern — May 2023 - August 2023
- Migrated and unit-tested high-traffic endpoint (10,000 calls per second) utilizing Go
- Achieved 63% latency reduction and reduced error rate by 88% after deploying to production
- Deprecated legacy and stale business logic as part of migration

Lockheed Martin — Software Engineer Intern — May 2022 - August 2022
- Processed aerial imagery using machine learning with Python, TensorFlow, and C++
- Utilized deep learning techniques to train convolutional neural networks to measure radar image quality
- Applied AI and optimization techniques to develop unique solutions to customers' challenges
- Collaborated with software engineers and worked within an Agile Scrum environment

University of Michigan — Undergraduate ML Researcher — September 2021 - April 2022
- Utilized Python and machine learning to run COVID-19 prediction program every week
- Generated COVID-19 forecasts on cases and deaths used by the CDC to better inform the public
- Used Matplotlib to produce weekly prediction graphs used by Michigan Governor Gretchen Whitmer

Projects

Password Manager and Generator | C++ — July 2021
- Developed program to store passwords
- Created encryption algorithm to hide passwords in text file using encryption key
- Built random password generator with user-specified password length

Cryptocurrency Price Tracker App | JavaScript, React, HTML/CSS — April 2022
- Used React to create application to search for cryptocurrencies and display information on browser
- Information on price, volume, and market cap from public API updates in real-time

Student Organizations

Triangle Engineering Fraternity - Treasurer — September 2022 – Present
- Managed an annual budget of $80,000 and ensured accurate utilization of funds for events
- Led a team of 4 individuals, providing support to ensure the smooth execution of their responsibilities

Michigan Hackers - Machine Learning Team — September 2021 – Present
- Developed natural language processing text summarizer using Python

Michigan Finance & Mathematics Society — January 2022 – Present

Technical Skills

Languages: C/C++, Python, Go, Java, HTML/CSS, Verilog, Assembly, MATLAB
Tools: TensorFlow, SQL, Flask, React, Git, Matplotlib, NumPy, pandas, VS Code, Linux