Aneesh Maganti

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EDUCATION

New York University, Tandon School of Engineering, Brooklyn, NY — May 2024
Bachelor of Science, Major in Computer Science — GPA: **3.71**
Relevant Courses: Algorithmic Machine Learning, Databases, Linear Algebra, Algorithms, Operating Systems

SKILLS

Languages C++, Python, Javascript, C#, Java, Bash,
Frameworks/Libraries SDL, Qt, React, Node.js, PostgreSQL, DynamoDB, Docker, Windows, Linux

EXPERIENCE

Corelink High-Speed Research Network, Brooklyn, NY, *Academic Researcher* — Sep 2021 - June 2022
• Implemented a C++ UDP network packet splitter to enable researchers to bypass Corelink's MTU limit from 20,000 to 64,000 bytes, increasing maximum throughput by 220%
• Managed 3 students within my team, assisting them with project design and implementation
• Researched Corelink's network architecture and RDMA (Remote Direct Memory Access)/InfiniBand protocol and wrote bash memory tests to determine the protocol's effectiveness for NYU researchers

Monarc, Dallas, TX, *Software Engineering Intern* — Jun 2021 - Aug 2021
• Applied MVVM (Model-View View-Model) principles to develop a C# UWP (Universal Windows Platform) page, letting users manipulate a robotic football quarterback to throw balls at 5 placements and distances up to 100 yards
• Devised error checks and boot logging to enable remote debugging, improving the stability of the machine

PROJECTS

Cost Matrix Testing on Matrix Rescaling Optimal Transport Algorithms — Sep 2022 - Dec 2022
• Wrote research paper *Application of Gaussian and Euclidean Cost Matrices to Matrix Rescaling Optimal Transport Algorithms* based on thorough review of *Near-linear time approximation algorithms for optimal transport via Sinkhorn iteration* to understand and analyze the transportation problem and matrix rescaling algorithms
• Wrote large test suite containing varying cost matrices (constant, random, gaussian, euclidean), datasets (perturbed and MNIST images), and matrix scaling algorithms including two newly written Greenkhorn variations with alternate row selection schemes (Greenkhorn Randomized and Inverse Gaussian) using the Python Optimal Transport library
• Determined row selection in Greenkhorn was not relevant to the runtime, showing pathway for further research

Chip8 Interpreter/Emulator — August 2022
• Designed C++ interpreter for Chip8 platform by emulating all 35 standard opcodes and its specifications (registers, memory, timers) after disassembling program binary data, allowing Chip8 programs to run on an x86 platform
• Employed SDL graphics library to write graphics renderer using SDL textures and handle user input

Alzheimer MRI Detection — May 2022
• Developed classification machine learning algorithm to sort preprocessed set of Alzheimer MRI images
• Tested using Python Sklearn library with three models - a logistic regression, support vector machine and convolutional neural network - with varying levels of regularization to determine which had the greatest accuracy

bkRoad - Amazon Lightsail Containers Hackathon — March 2022
• Won 2nd place in the hackathon
• Wrote Next.js application that allowed users to search, learn details, and loan books using 5 React.js pages
• Handled connections to a SQL Amazon DynamoDB and hosted on an Amazon Lightsail platform

Interview Automation - HackNYU — February 2022
• Wrote Next.js React pages for creating questions and admins and applicants info pages, assisting with interviewing candidates for NYU Research Teams by providing scheduling, quizzing and management services
• Handled authentication with NYU SSO (Single Sign-On) login via Auth0 platform