Aneesh Maganti

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EDUCATION

New York University, Tandon School of Engineering, Brooklyn, NY — May 2024
Bachelor of Science, Computer Science — GPA: **3.75**
Relevant Courses: Visualization in ML, Algorithmic Machine Learning, Networking, Databases, Algorithms, OS

SKILLS

Languages C++, Python, Javascript, C#, Java, Bash,
Technologies PyTorch, Next.js, QT, React, Node, PostgreSQL, Sklearn, Docker, Linux

EXPERIENCE

MarketFusion, Los Altos, CA, *Software Engineering Intern* — July 2022 - Sep 2022
• Developed client-side React.js web application registration and shopping pages for online food delivery service
• Facilitated user account creation by sending server requests to internal MySQL database via the Axios library
• Revamped login authentication by implementing 4 unique character password checks and a length requirement of 8-20 characters client-side via regular expressions and server-side to aid the security of the website

Corelink, Brooklyn, NY, *Software Engineering Intern* — Sep 2021 - May 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%
• Designed Next.js/React interview scheduling platform using Auth0 for authentication and MongoDB backend
• Guided 3 students as a part of my team, assisting them with their project design and implementation
• Scripted bash memory tests to determine the effectiveness of RDMA (Remote Direct Memory Access)

Monarc, Dallas, TX, *Software Engineering Intern* — Jun 2021 - Aug 2021
• Developed C# UWP desktop application pages using MVVM (Model-View View-Model) principles to 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

RESEARCH

Dynamic Diagonal Estimation — Mar 2023 - Present
• Designed and implemented a diagonal estimator for a dynamic matrix, DeltagonalShift, based on Hutchinson's diagonal estimator and the DeltaShift trace estimation algorithm
• Demonstrated Deltagonalshift was more effective than repeatedly running Hutchinson's diagonal estimator.
• Developing AdaHessian example via PyTorch to test Deltagonalshift compared to its current diagonal esimator

Cost Matrix Testing on Matrix Rescaling Optimal Transport Algorithms — Sep 2022 - Dec 2022
• Wrote research paper under Professor Christopher Musco to analyze different matrix rescaling algorithms
• Used Python OT library to implement large test suite with varying cost matrices, datasets, and matrix scaling algorithms including two newly written greenkhorn variations with alternate row selection schemes
• Determined row selection in Greenkhorn was not relevant to the runtime, showing pathway for further research

PROJECTS/ACTIVITIES

SentiTweet — March 2023 - April 2023
• Created sentimental tweet generator via modified PyTorch PPLM library with GPT-2 to simulate conversations between Twitter users using natural language generation
• Employed D3.js visualization library to create graph of tweets, their sentiments, and relationships

BUGS Open Source Club President — September 2022 - Present
• Coordinate student outreach, events, workshops, and meetings with other club board members and tech clubs
• Lead events including discussions of open source licenses and the Game Boy hardware/emulation