Aneesh Maganti

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EDUCATION

New York University, Tandon School of Engineering, Brooklyn, NY   Fall 2024
Bachelor of Science, Computer Science   GPA: **3.80**
Relevant Courses: Algorithmic Machine Learning, Offensive Security, ML Visualization, Computer Architecture

SKILLS

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

EXPERIENCE

Qualcomm, San Diego, CA, *Software Engineer Intern, AI Software/ML Group*   May 2024 - Aug 2024
• Implemented various memory optimizations across the Qualcomm AI Runtime (QAIRT), reducing peak memory usage by 20% across benchmarked ResNet50 and LLAMA2 and LLAMA3 LLM models
• Optimized AIMET quantization pipeline via C++ PyBind API to reference static graph tensors within Python subprocess, reducing in-memory allocations by 50%
• Refactored QAIRT/AIMET toolchain via PyTorch 'meta' device to prevent unnecessary weight initialization and modified model export to use in-memory IR graph, reducing disk space and improving runtime

New York University, Brooklyn, NY, *Teaching Assistant (Machine Learning)*   Sep 2023 - Dec 2023
• Instructed students weekly for machine learning topics of written and programming tasks through office hours
• Graded weekly assignments on the basis of proper algorithm implementation, code correctness and style

NYU Algorithms and Foundations Group, Brooklyn, NY, *ML Academic Researcher*   Feb 2023 - Sep 2023
• Designed and implemented *Deltagonalshift*, a diagonal estimator for a dynamic matrix under Professor Christopher Musco to improve neural network optimization based on DeltaShift trace estimation algorithm
• Demonstrated Deltagonalshift was more effective than repeatedly running Hutchinson's diagonal estimator

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

Corelink, Brooklyn, NY, *Software Engineer 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

PROJECTS/ACTIVITIES

BUGS Open Source Club President   Sep 2022 - Dec 2023
• Started and led 50+ member club by coordinating biweekly workshop and project coding events to discuss software engineering skills, foster contributions to open source, and create a fun, inclusive CS community.
• Led multiple workshops including discussion of open-source licenses, JavaScript Playwright automation, and an overview of emulation and the internals of C++ Game Boy emulator.
• Developed Next.js-React website NYU Syllabi with Netlify hosting and Docusaurus-based NYU CS Wiki websites

Dot Matrix - Game Boy Emulator   August 2023
• Designed x86 C++ emulator for the Game Boy platform by implementing 255 standard + 240 cb instructions
• Simulated hardware features including registers, graphics (SDL), memory, timers, interrupts, and input handling

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