Andy Chen

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Education

Carnegie Mellon University
B.S. in Information Systems, Minor in Computer Science

Pittsburgh, PA
Expected Graduation: December 2021

Relevant Coursework

- Principles of Imperative Computation
- Functional Programming
- Application Design and Development
- Distributed Systems
- Introduction to Computer Systems
- Database Design and Development
- Foundations of Software Engineering
- API Design and Implementation
- Natural Language Processing
- Parallel Computer Architecture
- Information Systems Consulting Project

Work Experience

Amazon Lab126, SDE Intern   May 2021 - Aug 2021
Designed and implemented an execution engine for a new Amazon device. Execution engine built as Android service and used for stitching actions/behaviors together. This tool is used to decrease development life cycles and also reduces trips between cloud and device when executing other services.

Consultant for Mon-Metro Chamber of Commerce (MMCC)   Feb 2021 - May 2021
Acted as a consultant to the MMCC, a local non-profit startup in the Pittsburgh area. Worked with a team of eight members and served as the technical program manager. Assessed client's pain points and helped guide their vision for building the organization. Implemented and designed a website to give organization a platform and launched a social media campaign that utilized SEO analysis to raise awareness. Managed project structure, designed tasks for the team, and successfully delivered final results before expected timeline.

Amazon Lab126, SDE Intern   Jun 2020 - Aug 2020
Developed software infrastructure for a new Amazon device. Implemented backend Android services and tools for internal clients. Created a web UI through React and deployed service using internal pipelines for cloud deployment. Features made into production and adopted by internal teams.

Projects

Parallel Floyd-Steinberg Dithering   Mar 2021 - May 2021
Explored multiple parallel frameworks for observing performance speedup of the Floyd-Steinberg Dithering Algorithm. Implemented algorithm using CUDA, OpenMP, and OpenMPI. Achieved maximum speedup of 3x with 8 cores. Conducted analysis of bottlenecks and performance variation across all implementations.

Raft Consensus Algorithm   Oct 2020 - Nov 2020
Built a leader-based consensus algorithm for log replication in Golang. Leader elections and log commits based on majority consensus Achieves a fault-tolerant key/value storage system, which is resilient to node failure, network partition, and packet loss.

Malloc Lab   Oct 2019 - Nov 2019
Implemented a dynamic memory allocator for C programs using segregated free lists with FIFO policy. Supports malloc, calloc, realloc, and free functions. Optimized using footerless blocks and mini blocks. Developed using C and used GDB for debugging.

Skills

Programming Experience: Java, C/C++, Python, Golang, SML, Ruby on Rails, Bash, x86
Frameworks/Services: CUDA, OpenMP, OpenMPI, NodeJS, ReactJS, Git, GDB, ROS, Gazebo, Android SDK, UML
Databases: Postgresql, MongoDB, Redis