Andrew Xue

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EDUCATION

Carnegie Mellon University **Aug 2023 - May 2027**
B.S: Information Systems, Additional Major: Computer Science GPA: 3.8/4.0

- **Honors:** Dean's list (all semesters)
- **Coursework:** Object Oriented Programming, Data Structures, Algorithms, Probability, Linguistics, Vector Calculus, Linear Algebra, Computer Systems, Functional Programming, Machine Learning, Human-centered Design, Database Design

Languages: Java, Javascript, C, Python (pandas, matplotlib, scipy), SQL, Swift, HTML, PyTorch, NumPy, CS, Agile
Tools: Arduino, R Studio, Adobe InDesign, Adobe Photoshop, Autodesk Maya, Figma, MATLAB

WORK EXPERIENCE

Alzheimer's Research Intern May 2024 - Aug 2024
Stanford University, School of Medicine

- Constructed a handheld, non-invasive vibrotactile device utilizing Arduino and firmware software to deliver precise vibrations across a wide range of frequencies
- Developed and implemented Python scripts to automate the cleaning and graph generation of EEG data, evaluating the significance of different vibration patterns, findings intended for inclusion in a future paper

PROJECTS

Dynamic Memory Allocator Oct 2024 - Nov 2024
Solo Project

- Designed a footerless allocator with bucketed segregated free lists, reducing internal fragmentation and increasing memory utilization by 9% and throughput by 300%
- Improved allocation efficiency using best-fit block placement heuristics and explicit free lists, achieving 74% utilization and 6,000 KOPS throughput on benchmarks

LRU Cache Memory Simulator Oct 2024 - Nov 2024
Solo Project

- Built a cache simulator with configurable sets, associativity, and block sizes, using LRU replacement and write-back strategies to achieve 100% correctness across all test cases.
- Optimized cache performance with blocking techniques, reducing conflict misses and ensuring efficient memory access for matrices of 32 x 32 and 1024 x 1024 dimensions.

CMU Maps | maps.scottylabs.org Jan 2024 - May 2024
Scotty Labs, Carnegie Mellon University

- Developed the Figma wireframes used to design the UI and UX for user interactions with maps, tailored to the unique CMU campus experience
- Proposed and illustrated new features for both the front-end and back-end to enhance the overall functionality and user experience of the application

LEADERSHIP

Taiwanese Student Association, Executive Board Oct 2023 - Present
Carnegie Mellon University

- Coordinate weekly, monthly, and annual events, including club trips, fundraisers, and general body meetings
- Serve as a central communicator between club's board members and general body members, fostering a welcoming and inclusive environment