Haobo Chen

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EDUCATION

Grinnell College   Grinnell, IA
B.A. Computer Science, B.A. Japanese   *Aug. 2021 – May 2025*
- GPA: 3.95/4.0 (Major GPA: 4.0/4.0)
- Dean's List (five semesters)
- Relevant Coursework: Data Structures, Computer Organization and Architecture, Operating System, Analysis of Algorithms, Software Design and Development, Automata and Formal Languages, Discrete Mathematics and Probality Theory, Introduction to Electrical Engineering, Linear Algebra, Calculus II

EXPERIENCE

Autonomous Driving Research   Dec. 2023 – Present
North Carolina State University   *Raleigh, NC*
- Used the CARLA simulator to create and evaluate complex scenarios for autonomous vehicles
- Wrote advanced algorithms for autonomous driving, focusing on optimizing vehicle behavior, safety, and efficiency
- Identified and analyzed bugs in autonomous driving algorithms

Japanese Independent Research   Sep. 2023 – Dec. 2023
Grinnell College   *Grinnell, IA*
- Conducted research about the relationship between Japanese and Chinese language and Japanese Education
- Held interviews in Japanese students and analyzed data from 20+ students
- Wrote a 20-page paper on the topic and presented it in the Japanese department

Stats2Lab Software Development   Feb. 2023 – Sept. 2023
Grinnell College   *Grinnell, IA*
- Designed and developed three web educational games in Unity using C# (Farmer, Greenhouse, and Coffeetruck) to assist teaching of multivariate statistical models in college courses
- Deployed games to 1000+ students as part of undergraduate statistics curriculum at 5 institutions for beta testing
- Developed a web application to collect and analyze data from the games

General Chemistry Course Mentor   Jan. 2023 – Dec. 2023
Grinnell College   *Grinnell, IA*
- Managed weekly prep assignments, check-ins, and general logistics for class of 20 students
- Held multiple weekly discussions, labs, and homework sessions for students
- Answered questions and provided feedback on assignments

Physics Lab Assistant   Sep. 2022 – Sep. 2023
Grinnell College   *Grinnell, IA*
- Tutored students in fundamental physics course sequence (Mechanics, E&M)
- Assisted professor setup lab apparatus

PROJECTS

Gitlet | *Java, Git, Maven*   Dec. 2022 – Jan. 2023
- Developed a simple version control system in Java that mimics some of the basic features of Git
- Used Java standard library to implement init, add, commit, log, branch, checkout functions
- Implemented remote features, allowing collaboration with other people over the internet

CS61CPU | *C, Assembly*   March 2023 – May 2023
- Designed and implemented a skeleton CPU that can execute RISC-V instructions
- Implemented a 2-stage pipeline and branch prediction

NUMC | *C, Python, SIMD*   April 2023 – June 2023
- Replicated the NumPy functions of matrix operation in C and generated python package
- Optmized the package by SIMD, OpenMP, loop unrollling, cache manipulation, matrix transposition

Pintos Operating System | *C, Assembly*   May 2023 – August 2023
- Implemented user program support, system call interface, priority thread scheduling, and cached file system of the Pintos Operating System
- Optimized the system by priority scheduling, lazy loading, and cache manipulation