

Yinchu Shen

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EDUCATION

Carnegie Mellon University (GPA: 4.0/4.0)

BS in Computer Science and Electrical and Computer Engineering

Pittsburgh, PA

May 2028

EXPERIENCE

Research Intern

March 2025 - Present

AXEL Lab - HCI @ Carnegie Mellon (Python, Data Analysis, App Development, C)

Pittsburgh, PA

- Developed Python-based data transmission system utilizing Bluetooth protocols to establish ground truth datasets for machine learning study, enabling 1Hz sensor-to-application communication for wheelchair movement analysis.
- Collaborated on mobile application development to track and analyze wheelchair user movements and push patterns, collecting 100,000+ data points to support ML research.

Teaching Assistant (Intro to Imperative Programming)

June 2025 – Present

Carnegie Mellon University (C, Data Structures/Algorithms, Bash, Communication, Linux)

Pittsburgh, PA

- Mentor 500+ students in foundational CS concepts including data structures and algorithmic design, providing constructive, positive feedback to students in a timely manner.
- Led weekly recitation sessions for 60+ students, breaking down complex algorithmic concepts and proofs.
- Collaborated with a 30-person TA team to maintain course software and website, keeping consistent, professional correspondence with students, TAs, and the professor.

PROJECTS/OTHER EXPERIENCES

Full-Stack College App Platform | *JS, React, Node, DevOps, MongoDB, Database*

March 2025 – Present

- Built responsive React UI with JavaScript featuring UX best and responsive design principles and CSS Grid/Flexbox layouts, under 1s page load times while supporting 50+ daily active users.
- Architected scalable RESTful API design with Node.js utilizing multi-threaded processing for concurrent operations, implementing flexible API rate limiting and caching to ensure system stability and prevent abuse, handling 1,000+ requests per minute.
- Deployed scalable MongoDB server architecture achieving <100ms API response times and 99.9% uptime while processing 50+ concurrent user sessions and complex querying operations.
- Established robust CI/CD pipeline with automated testing, monitoring, and deployment workflows, decreasing deployment time by 90%.

Software Engineer @ Carnegie Mellon Racing | *Firmware, C, Jira, Confluence, Git, RTOS*

Aug 2024 - Present

- Programmed and refactored 10,000+ lines of C code, implementing complex state logic and communicate between software and hardware.
- Maintained code architecture and monorepo, while leading the transition to flashing code over CAN, reducing testing time by over 90%.

Machine Learning Research | *Machine Learning, Data Labeling*

May 2023 - March 2024

- Created predictive ML model analyzing mental health trends, utilizing insights from over 500+ survey responses to uncover key issues affecting more than 70% of participants.
- Engineered robust data pipeline processing 15+ categorical features using quantitative techniques, achieving a prediction rate of 95% and generating peer-reviewed publication.

AI-Powered Gmail Agent | *Generative AI, Python, API, Data Analytics, Google Cloud*

July 2025

- Built object-oriented Gmail AI agent with Google and Gemini API integration featuring automated email classification, intelligent labeling, and generative response capabilities for streamlined inbox management, processing 100+ daily emails with 95% classification accuracy.

TECHNICAL SKILLS

Languages: C/C++, Python, JavaScript, SQL, Bash, Linux, SML

Technologies: React, Express, HTML/CSS, RESTful APIs, Node.js, MongoDB, Git, Pytorch, Microsoft Cloud

Core Concepts: Data Structures/Algorithms, Machine Learning, Agile, Artificial Intelligence, Object Oriented