

# Raymond Chi

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## EDUCATION

**The Cooper Union for the Advancement of Science and Art**, New York, NY 09/2021 – 05/2025  
Bachelor of Engineering in Electrical Engineering | Minor in Computer Science | GPA: 3.4/4.0

Awards/Activities: Full-Tuition Merit-Based Scholarship, Selected for School Honors (2 semester), Philosophy Chair of Zeta Psi, Formula SAE Team, MUDBUG, CUSAP

**Coursework:** Hardware Design, Computer Architecture, App Development, Frequentist ML, Operating System, Data Structure and Algorithms, Speech and Audio Processing, Communication Networks, Software Engineering, NLP, Probabilities and Stochastic

## SKILLS

**Languages:** Python, C, C++, MATLAB, Verilog, HTML, PostgreSQL, Shell Script, VHDL, Javascript, MySQL, Java, Typescript

**Frameworks/Libraries:** React-Native, React, Spring Boot, Flask, RestAPI, Django, Tensorflow, Scikit-learn, Pandas

**Technologies:** Github, FPGA, Azure, GCP, Microcontrollers, AMD Xilinx Vivado, LTSpice, Linux, Firebase, Cadence, Docker

## WORK EXPERIENCE

**Machine Learning Researcher, The Cooper Union** New York, NY 09/2024 - Present

- Architecting cognitive decline detection pipeline for ICASSP 2025, set up GCP infrastructure for team's vGPU access.
- Built multi-modal ML (XGBoost/CNN) reaching 55%+ accuracy for multiclass on 157-subject imbalanced speech dataset.
- Engineered dataset with Whisper Timestamped for segment extraction of acoustic features and embeddings (1100+ features).

**Software Engineer Intern, Global Key Solutions** New York, NY 06/2024 – 09/2024

- Developed a LangChain-powered chatbot using RAG and SQL/PGQ, automating data retrieval and enhancing reliability.
- Designed MySQL tables and APIs, decreasing downtime by 90% and assist data migration for 200% database expansion.
- Automated PDF OCR extraction, streamlining workflows and increasing processed data volume by 25%.
- Built a periodic web scraper with BeautifulSoup and Selenium, updating 3,000 entries in the production database.
- Contributed to Agile weekly sprints with Jira, ensuring continuous delivery and team collaboration.

**Instructor, BlueStamp Engineering** New York, NY 05/2024 – 07/2024

- Led 20 students in IoT projects with microcontrollers, achieving 95% completion rate and 100% positive feedback.
- Guided 5 autonomous robotics projects, achieving average 85% object detection accuracy, using OpenCV.
- Directed Flask-controlled robotics projects, emphasizing the integration of web interfaces in IoT solutions.
- Mentored students on UART, GPIO, I2C, and ADC, resulting in 100% successful IoT project completions.

**Software Engineer Intern, Ambedded Technology Co., Ltd.** Taipei, Taiwan 07/2023 – 09/2023

- Optimized Ceph storage on ARM-based clusters, reducing read/write latency by 10% via sysctl tuning and CPU scaling tests.
- Implemented FIO tests using Jenkins to analyze performance across various core-to-OSD ratios for cluster efficiency.
- Created detailed performance reports, including IOPS and throughput analyses, guiding system optimization decisions.
- Explored DPDK implementation and network setting tuning to enhance latency performance in ARM-based storage systems.

**IoT Engineering Intern, Loisiada Inc.** New York, NY 12/2021 – 05/2022

- Deployed 40 Arduino and Pi remote sensing units with temperature/humidity/CO2 sensors to monitor urban microclimates.
- Implemented Raspberry Pi Edge Gateways for real-time data aggregation and processing.
- Architected a Dockerized PostgreSQL database for efficient sensor data storage and visualization.
- Engineered a Linux-based mini-PC hub for reliable data collection and seamless system integration.

## PROJECTS

**Pfizer Digital Hackathon, 2nd Place Winner, CUCU - Mental Health Platform** | [Link](#)

- Designed a mood-classification algorithm and journaling tool for NYC public high school students, connecting them to licensed social workers to address mental health inequities in underserved communities.

**NLP Project Developer, Language Detection and Sentiment Analysis** | [Link](#)

- Built and compared FNN and CNN models using TensorFlow and Keras for language detection, achieving up to 97.2% accuracy with TF-IDF embeddings, and implemented sentiment analysis using CardiffNLP's Twitter models.

**Full stack iOS mobile application, Nexus** | [Link](#)

- Created a networking application using React Native, featuring advanced discovery filtering with API integration, seamless match making system, and real-time chat functionality utilizing WebSockets.