

# Raymond House

[LinkedIn](#) | [Github](#) | [raymondhouse2003@gmail.com](mailto:raymondhouse2003@gmail.com) | Sunnyvale, CA | (650) 770-3107 | [raymondhouse.net](http://raymondhouse.net)

## EDUCATION

---

**University of California Irvine** | B.S. in Computer Science | Specialization: Artificial Intelligence

- Irvine, CA (Graduating June 2025)

**Core Courses:** Compiler Design, Machine Learning, Computer Architecture, Digital Security, Algorithms, Data Structures

## EXPERIENCE

---

**Software Development Researcher** | UCI Gavin Herbert Eye Institute

2023 Jul — Present

- Developed a CNN-based Android app that identifies medication labels using object detection and text recognition. Published on Google Play store with 50+ downloads, used by several medical facilities.
- Optimized expiry date algorithm by 40% and wrote methods to store / retrieve JSON data in internal storage.

**Software Engineer Intern** | NeuroLeap Corp.

2023 Sep — 2024 January

- Developed API endpoints in Go for emails transactions, user registration, and user information changes using Sendinblue, along with session token validation for secure web processes.
- Conducted testing of all APIs using Postman and Postgres + SQL to ensure reliable backend functionality.

**Data Analyst** | Field AI

2024 April — Present

- Assisted in training an AI-based autonomous vehicle using semantic segmentation, with LiDAR software.
- Pre-processed data and reviewed others' labeled data, keeping in mind the current performance of the model.

## PROJECTS

---

**HPC Image Processing Kernels** *CUDA Toolkit, C++, Nsight Systems, OpenCV*

- Developed kernels which perform: **2D convolution** for images with RGB channels, image padding, and matrix multiplication in parallel utilizing **grid-stride loops** and replication padding. Default filter is Gaussian blur.
- Reduced data migrations using **async memory prefetching**, caused by initializing the image array with 8 bit image data and converting a float array to image in CPU— and memory is used by GPU in between.
- Profiled and analyzed performance for optimization using **Nsight Systems**.

**Java Tiny Compiler** *Java, Dot, DLX*

- Built an **SSA based** compiler in Java for a context-free grammar.
- Program visualizes the intermediate representation in GraphViz using Dot. Instructions in **DLX** (RISC architecture)

**Biometrics Analysis Platform** *Flutter, Dart, React, Typescript, Firebase*

- Developed a machine-learning based app using Flutter that identifies heart arrhythmias in a patient's pulse.
- Doctors and patients are authenticated using **Google Cloud** (firebase) and registered through a React/TS website.
- Pulse is calculated using **camera-based PPG** and ran via a model trained on an ECG dataset of 100,000+ patients.

**Game Development** *Spigot API, Java, Maven, Gson*

- Developed laser guns using **ray tracing techniques** via Spigot API. Integrated new ItemAction system to manage custom item behaviors, utilizing **persistent data storage** to ensure actions are retained on server restart.
- Made region creation / saving plugin. Region data(JSON) is parsed on server start, and saved on shutdown.

## TECHNICAL SKILLS & CERTIFICATES

---

**Certificates:** NVIDIA Accelerated Computing in CUDA C/C++, Accelerated Computing with CUDA Python

**Languages:** Java, Javascript, Typescript, C++, Python, Go, Kotlin, Dart, SQL

**Software:** Visual Studio, Nsight Systems, JetBrains Suite, Android Studio, Google Cloud, Docker, Postman

**Frameworks/Libraries:** CUDA, React, Prisma, Vue, Flutter, ML Kit, Pandas, Sci-kit Learn, Selenium