

# Nicolás Kennedy

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*A broadly curious and engaged professional seeking meaningful work with driven and diverse teams and individuals! I have a passion for software engineering, hardware design, applied mathematics and physics, which I balance with hobbies of martial arts and music.*

## SKILLS

**Languages:** C, C++, Rust, Python, Java, JavaScript, TypeScript, HTML, CSS, Scheme, SQL

**Technical:** Git, AWS, Docker, Node.JS, React.JS, PyTorch, Firebase, Heroku, Google Colab, Vim, Electronics, Arduino, Algorithms and Data Structures, Machine Learning, Linux System Administration (Debian, Alpine, NixOS, Gentoo)

**Currently Learning:** Haskell, VHDL, Digital Circuit Design, RISC-V, Abstract Math

## PROFESSIONAL EXPERIENCE

**Research Intern**, University of California, Davis (Dr. Ian Davidson) | *Sep 2023 – Present*

- Invented and formalized unsupervised, performant dataset-agnostic systems that explain clusters using text tags
- Modified the Deep SVDD outlier detection system in PyTorch, adding a convolutional variational autoencoder
- Co-author on paper with submission to conferences in 2024

**Research Intern, MIT** (Dr. Arvind Satyanarayan) | *May 2021 – Aug 2021*

- Orchestrated pipelines for machine learning experiments and automated research survey collection
  - I took initiative, developed procedures for interfacing with outdated batch compute clusters at MIT
  - Interfaced Linux systems together, proactively wrote documentation for team without explicit guidance
  - Automated research survey generation using Qualtrics, with parsing and storage
- Directed the usage of mission-critical tools for the whole team of Ph.D, M.S, B.S. students

**Software Engineering Contract**, Alcatraz A.I. | *Nov 2020 – Feb 2021*

- Architected and solely implemented a full-stack realtime web system for sales quotation
  - Constructed a custom, scalable backend using WebSocket and a clean frontend interface in Bootstrap
- Quickly adjusted broad functionality to changes in design constraints and requirements
  - Fast and unexpected changes to product pricing and business pricing models
  - Within a week, I integrated a system that updates without any downtime from Google Spreadsheets written by employees across departments.

**Martial Arts Instructor**, Vision Martial Arts | *Jun 2018 – Oct 2019*

- Broad responsibility: teaching and evaluating students for rank graduation, handling inquiries and walk-in visits
- Successful real-time negotiation with unhappy and occasionally hostile visitors and parents

## PROJECTS / Open Source

**Embedded Raytracing**, *Personal Project, 2020*

- Wrote a ray-traced spinning torus in C that uses ASCII characters for shading, rendering into the console
- All mathematics (trigonometry, square roots) implemented from basic arithmetic using numerical approximations

**Multiplayer Scalable Board Game**, *Personal Project, 2020*

- Created a multiplayer rendition of the classic board game *Go* entirely in Rust
- Frontend written with Yew, multithreaded backend written from scratch with async Rust

**Retrofitting Thinkpads**, *Personal Project, 2018 - Present*

- Flashing custom Coreboot firmware to capable Thinkpads with external soldering, disabling the Intel Management Engine, configuring custom Linux kernels with Gentoo (Achieved RAM usage down to 60 MB on login)

**Linux Package Maintainer**, *Open Source, 2021 - Present*

- Became the maintainer of a VEIKK graphics tablet driver package for NixOS after finding it was not available
- Collaboration with thousands of other maintainers and also distribution admins to keep the system functional

## EDUCATION

**UNIVERSITY OF CALIFORNIA, DAVIS** | GPA: 3.958 | *Sep 2022 – Jun 2025*

B.S. Computer Science and Engineering (Dean's Honor List)