

Kunal Pai

Davis, California | <https://www.linkedin.com/in/kunpai/> | (408) 620-2339 | pai.kunal05@gmail.com | github.com/kunpai

Research Interests: Computer Architecture, open-source simulation, validation and known-good configurations, Machine Learning, Natural Language Processing.

EDUCATION

University of California - Davis

Davis, CA

Major in Computer Science and Engineering, Minor in Religious Studies

June 2023

- Provost Award Recipient
- Dean's List (Fall 2019, Fall 2020, Winter 2022, Spring 2022)
- Current GPA: 3.837 ; Engineering GPA: 3.878

Relevant Coursework: Object-Oriented Programming, Data Structures and Algorithms, Machine Dependent Programming, Computer Architecture, Advanced Algorithm Design, Theory of Computation, Statistical Modeling, Operating Systems, Embedded Systems, Computer Networks, Software Engineering.

RESEARCH EXPERIENCE

Davis Architecture Research Lab

Davis, CA

Undergraduate Researcher

June 2022 - Ongoing

- Integrated the gem5 Standard Library components to create a pre-built board modeled after the HiFive Unmatched.
- Co-authored tutorials on perf compilation and documentation for the Standard Library.
- Currently validating the statistics returned by the board on gem5 to those returned by perf on real-life hardware.

DECAL Lab

Davis, CA

Undergraduate Researcher

September 2022 - Ongoing

- Automated extraction of GitHub commit data from Google's Bug-Fixing dataset.
- Categorized bug-fixing dataset into eval, test and train, and tokenized functions along with identifiers.
- Co-testing effects of uni-modal and multi-modal learning on random and selective sampling of buggy and fixed code snippets.

RELATED PUBLICATIONS

K. Pai and J. Rangi, "How to setup additional 'perf' events on the HiFive Unmatched," *UC Davis Computer Architecture*, Sep. 15, 2022. <https://arch.cs.ucdavis.edu/blog/2022-09-15-perf-hifive>.

WORK EXPERIENCE

humanID

Davis, CA

Tech Team Lead

April 2022 - June 2022

- Coordinated project task completion with global teams, delivering 10 completed projects.
- Implemented time-effective hiring practices for developers based on agile development principles, improving performance by 50%.
- Co-created documentation on the implementation of a Discord bot that combats spam and fake users.

humanID

Davis, CA

Software Development Intern

January 2022 - April 2022

- Algorithmically hierarchized 100 users and their associated permissions in a Django-based web application.
- Refactored part of the code base to follow software craftsmanship principles.
- Implemented interactive features for a frontend website in collaboration with the Design team.

SiTime Corporation*Technical Product Marketing Intern***Santa Clara, CA***July 2021 - September 2021*

- Co-authored a product requirements document for a newly-released timing chip in the semiconductor industry.
- Conducted a market survey on optical transceivers and studied potential applications of MEMS timing chips.
- Presented strategy to hierarchize distributors and maximize stakeholders' earned profits by \$250,000.

PROJECTS**UNify - Course Assistant***Discord Bot, Python, Javascript***Davis, CA***January 2022*

- Utilized the UC Davis Schedule Builder API to extract class timings and professors.
- Formulated a class-based hierarchized dictionary to maintain schedules of over 100 server members in five Discord servers.
- Extracted data from APIs of Rate My Professor and Google Calendar to add additional features to the bot.
- Solidified skills of good software design to understand and solve problem domain.

OLED Paint*C, Python***Davis, CA***May 2022*

- Utilized SPI and I2C to create a tilt-based paint application between the CC3200 and Adafruit OLED.
- Created a webserver and implemented a compression algorithm to transfer 128x128 bitmaps from a board to a computer.
- Conferred Best Lab Project for Spring 2022.
- Solidified skills of utilizing datasheet information to interact with hardware better.

SKILLS & INTERESTS**Languages Spoken:** English, Hindi, Gujarati, Spanish, Marathi, Konkani.**Programming Languages:** Python, C, C++, Javascript, CSS, HTML, Go, LISP, Prolog, Java, Chisel3.**Technical Skills:** gem5, Adobe Photoshop, Audacity, DaVinci Resolve, WordPress, Microsoft Office Suite, Visio.