

# Cole Thompson

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## EDUCATION

### University of California, Irvine

*Bachelor of Science in Computer Science*

Irvine, CA

*Sep. 2021 – June 2025*

### Cumulative GPA: 3.88/4.0

*Dean's Honor List; Regents' Scholar; Hack at UCI*

## PROJECTS

### Search Engine and Web Crawler

April 2023 – June 2023

*HTML/CSS, Python, Flask, BeautifulSoup, NLTK, Hashlib*

- Designed a custom web search engine with the ability to handle 50,000+ documents under harsh operational constraints and having an average query response time under 100ms
- Incorporated partial indexing to save memory usage and made use of the Snowball Stemmer for better textual matches
- Improved ranking accuracy for a subset of the UCI web domain through tf-idf scoring and cosine similarity in addition to assigning weights for HTML tags
- Used sim-hashing to detect and eliminate near duplicate pages

### Firecrest

May 2023 – Present

*HTML/CSS, JavaScript, SQL, Python, React, Flask, PostgreSQL, LangChain, Render*

- Developed a generative AI design dashboard that facilitates content generation and selection of various template outputs
- Implemented custom LLM settings enabling model and token number alterations, enhancing user experience
- Introduced a feature to browse popular prompt topics and subtopics, streamlining content creation
- Leveraged PostgreSQL for efficient data management
- Incorporated OAuth 2.0 and 2FA, securing user authentication and protecting sensitive data
- Utilized technologies such as LangChain, Open AI, PaLM, and Hugging Face for diverse language model training and development

### GUI Chat Application

January 2022 – March 2022

*Python, Tkinter, Git*

- Developed a DSP platform direct messaging module with a GUI using Tkinter
- Used my knowledge of the computer file system in order to store messages locally with other users (DSU files)
- Utilized sockets to be able to send and receive direct messages with another user

### PlateMate

February 2023

*Python, Swift, FastAPI*

- Created a recipe app utilizing Edamam's Recipe Search API and Swift
- Deployed backend services using Python and FastAPI for efficient data handling and processing
- Leveraged Xcode for app development, debugging, and deployment on iOS devices

## EXPERIENCE

### ICS Lab Assistant | University of California, Irvine

January 2023 – June 2023

- Supported and tutored students in building programs for a variety of problems and computing environments in Python
- Guided students in leveraging library modules for a range of applications including: graphics, databases, web APIs, networks and sockets
- Introduced and reinforced fundamental programming concepts and language features during office hours

## TECHNICAL SKILLS

**Languages:** Python, C++, HTML/CSS, JavaScript

**Developer Tools/Frameworks:** Git, React, Flask, Vim, Linux