Cole Thompson

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Skills

Languages: Python, JavaScript, Java, C/C++, HTML/CSS, SQL
Tools/Platforms: Git, Vim, Linux, Docker, Kubernetes, AWS, Maven, Tomcat, Figma
Frameworks/Databases: React, Flask, Node.js, Express.js, MongoDB, PostgreSQL, MySQL

Education

University of California, Irvine **Irvine, CA**
Bachelor of Science in Computer Science *Cumulative GPA: 3.88/4.0*
Dean's Honor List, Regents' Scholar, Hack at UCI, CodePath *Sep. 2021 – June 2025*

Coursework: Data Structures & Algorithms, Semi-structured Data, Information Retrieval, Database Management

Experience

AfterFlea OS January 2024 – April 2024
Software Engineer Intern *San Francisco, CA (Remote)*
- Leveraged **React** and **JavaScript** to redesign the landing page, significantly enhancing visual appeal and user engagement metrics
- Integrated **MongoDB** and enhanced messaging functionality, supporting communication for 200+ user personas and improving message delivery/display
- Revamped the signup/login workflow for a fluid user experience that contributed to successful user registrations and used **Docker** to streamline development workflows which resulted in a 20% improvement in deployment efficiency
- Created detailed mockups via **Figma** for the platform's user feed feature, facilitating early user testing and feedback incorporation, which guided the development towards a more user-centric design

University of California, Irvine January 2023 – June 2023
ICS Lab Assistant *Irvine, CA*
- Supported and tutored 50+ 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

Projects

Firecrest.ai May 2023 - September 2023
Python, Javascript, HTML/CSS, React, Flask, Langchain, Render, PostgreSQL, Git
- Generative AI dashboard implemented with **React** and **Flask**, integrated with a **PostgreSQL** database
- Designed and launched custom LLM configuration features using **Langchain**, increasing model, token, and temperature flexibility through user-defined parameters
- Built prompt topic browser to improve navigation and reduce average search time
- Added **OAuth 2.0** authentication and **2FA** to securely manage 50+ user accounts

Search Engine and Web Crawler April 2023 – June 2023
Python, HTML/CSS, Flask, Beautiful Soup, NLTK, Hashlib, Git
- Designed a custom web search engine with the ability to handle 50,000+ documents and reduced average query response time to under 100ms by indexing token positions
- Incorporated **partial indexing** to save $>$ 80% 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

Fabflix April 2024 – June 2024
Java, JavaScript, jQuery, AJAX, MySQL, Tomcat, Maven, Docker, Kubernetes, JMeter, AWS, Git
- Engineered a dynamic web application enabling users to browse, search, and purchase from a vast movie catalog hosting 20,000 movies and 70,000 actors
- Developed a robust architecture incorporating **Tomcat**, **Maven**, and **MySQL** along with **AWS EC2** for scalable compute resources and **HTTPS**, **reCAPTCHA**, and password encryption for security
- Ensured support for CRUD operations under users/administrators, integrating features including session-based cart checkout, full-text search with auto-complete, and SQL injection prevention via **PreparedStatements**
- Deployed the application on an AWS-based **Kubernetes** cluster using **Docker** containers, utilized **S3** for storage, and leveraged **JMeter** to identify performance bottlenecks/threading issues, ultimately improving database performance by 25% through MySQL connection pooling