Cole Johnson

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EDUCATION

University of Southern California Los Angeles, CA
Viterbi School of Engineering August 2021-Present
Bachelor of Science, Computer Science
Honors and Awards: Presidential Scholarship, University Scholarship, Tuition Exchange Scholarship, National Merit Finalist (Scholarships collectively cover full tuition and living costs)

Relevant Skills: C++, Python, Java, C, Unsloth, Flask, Firebase, MySQL, Git, Docker, Gradle, Android Studio, HTML, CSS, XML, JavaScript

PROFESSIONAL EXPERIENCE

Chocolate Chip AI (https://chocolatechip.ai) Los Angeles, CA
Software Engineer June 2024 - Present

- Fine-tuned LLMs using Unsloth through Runpod for AI driven restaurant drive through systems, automating interactions with POS systems.
- Contributed to creating an AI conversation service akin to ChatGPT leveraging web crawling, LlamaIndex embeddings, and database management along with LLM prompting to provide user responses based on scraped content from domain experts and celebrities.
- Developed robust data pipelines to crawl, clean, and store all forms of expert content in databases, enabling accurate and context-specific AI responses.

ignITe Hub (https://ignitehubmc.com) Rockville, MD
Teacher June 2023-August 2023

- Taught Swift and iOS app development fundamentals to middle school students, focusing on tech career pathways and prototype app design.
- Mentored teams in creating non-profit-oriented apps and pitching final projects to stakeholders.

Juvo+ (https://www.linkedin.com/company/juvoplus) Los Angeles, CA
Software Engineer November 2022-March 2023

- Developed a Python solution to accurately predict seasonality for Amazon products by leveraging time-series analysis, achieving a seasonality index accuracy of 95%.
- Implemented a confidence scoring system integrating advertising costs, historical data length, and Out of Stock frequency, enabling Marketing and Demand planning teams to make data-driven decisions.

Error Corp (https://www.error-corp.com) College Park, MD
Research Intern May 2022-August 2022

- Utilized the quantum toolkit QuTiP's GRAPE algorithm to optimize quantum control pulses aimed at reducing decoherence in quantum systems for quantum computing startup at University of Maryland.

RELEVANT PROJECTS AND COURSES

Study Buddy Fall 2024

- Built an end-to-end Android application allowing USC students to form study groups, exchange resources in private/group chats, and schedule sessions via Google Calendar's API. Developed a Firebase backend (Realtime Database, Storage, Authentication) for real-time collaboration and secure user management.

POS Tagger Spring 2024

- Implemented a Hidden Markov Model with the Viterbi algorithm to perform part-of-speech tagging on large text corpora. Achieved highly accurate predictions by refining transmission and emission probabilities with iterative training.

Portal Game Fall 2023

- Developed a 3D puzzle game from scratch entirely in C using SDL2. Implemented real-time rendering, custom view matrices for portal views, and a multichannel audio system. Utilized linear algebra techniques to handle dynamic camera perspectives and seamless perspective shifts.

Relevant Coursework: Natural Language Processing, Artificial Intelligence, Operating Systems, Computer Systems, Networking, Probability Theory, Vector Calculus and Partial/Ordinary Differential Equations, Object Oriented Programming, Software Engineering, Computing and Numerics, Algorithms