John Rothbard

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EDUCATION

UC IRVINE   **Irvine, CA**
Bachelor of Science; Computer Science; 3.7 GPA   **2023 - 2025**
MOORPARK COLLEGE   **Moorpark, CA**
Associate of Science; Computer Science, Mathematics; 3.9 GPA   **2021 - 2023**

PROFESSIONAL EXPERIENCE

KPFF ENGINEERING   **Los Angeles, CA**
Software Engineering Intern   **Spring 2025**
- Spearheaded the full-stack development of a cross-platform structural visualization tool, leveraging Python for data preprocessing and Godot for advanced 3D rendering and real-time simulation.
- Engineered an intuitive GUI that simplifies simulation workflows for structural engineers, with potential to rival industry-standard software for company-wide deployment.
- Cooperated in a passionate team to define architecture, assign tasks, and refine designs in agile environment.

DTS PLAY-FI   **Calabasas, CA**
Quality Assurance Intern   **Summer 2022**
- Led comprehensive audio testing protocols to evaluate the performance of surround-sound speakers.
- Identified, documented, and reported over 20 critical level bugs on the Play-Fi software suite.
- Accumulated over 250 hours of professional hands-on experience, working closely with iOS, Android, and Google TV operating systems.

TECHNICAL PROJECTS

Compiler Optimization
- Implemented an interference graph data structure, applying graph theory concepts to optimize memory usage via register allocation.
- Crafted robust test cases ensuring the accuracy and efficiency of the graph structure and register allocation algorithm, emphasizing performance within time constraints.
- Demonstrated C++ proficiency, applying data structures coursework to solve real-world challenges.

Search Engine
- Designed and built web search engine, covering crawling, indexing, and query processing.
- Implemented disk-based indexing for 50,000+ pages with partial merges to efficiently optimize RAM usage.
- Improved ranked results from a query via TF-IDF and weights, maintaining response times under 300ms.

Unix Shell
- Developed a custom Unix shell in C, applying advanced programming concepts, utilizing the management of processes, file accessing, and inter-process communication.
- Integrated I/O redirection and piping features, facilitating complex chaining of commands, along with signal handling for reaping. Execution of both foreground and background processes simultaneously.

SKILLS

- Python, C/C++, Java, C#, Javascript, Data Structures & Algorithms, Quality Assurance, iOS/Swift, Git, Typescript, React, SQL, HTML/CSS, AWS, Game Development, Godot, Unity, Figma, Photoshop, Jira, Machine Learning, Operating Systems, Software Testing, UI/UX Design