

RAYMOND J. WANG

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EDUCATION

University of California San Diego
B.S. Computer Engineering

September 2021 – June 2025
3.80 GPA

Relevant Coursework: Operating Systems, Computer Architecture, Data Structures & Algorithms, Software Engineering, Embedded Systems, GPU Computing, Computer Security, Computer Networks, AI & Machine Learning Algorithms

EXPERIENCE

Research Intern, Integrated Photonics Laboratory, University of Tokyo June 2024 – August 2024

- Collaborated with UTokyo researchers to write a metasurface optimizer using shifted angular spectrum method and Adam optimization in Python with NumPy to enable hardware-accelerated machine learning integration.

Executive Student Assistant & Web Developer, UC San Diego Transportation Services December 2022 – June 2024

- Managed and redesigned the campus transportation website's 80+ pages and forms, ensuring accuracy, legal compliance, and improved organization, design, and user experience.
- Built automation and internal web tools on GCP, including a website change-tracking system using wget, Bash, and cron; a web application that leveraged reverse-engineered ParkMobile APIs to enable bulk parking zone lookups; and a private prototype deployment environment for proposed changes.

Webmaster, IEEE @ UCSD Student Organization October 2022 – May 2023

- Rewrote and maintained TypeScript React codebase, reducing initial load size by 83% while improving responsive design and user experience. Implemented Firebase deployment and preview workflow, and managed domain records.

Creative Officer, UCSD Esports Student Organization February 2021 – September 2023

- Collaborated with creative team to design and produce motion graphics and digital media for social media and streams.
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PROJECTS

DocsAfterDark — *JavaScript, CSS, HTML, Node.js* January 2022 – Present

Open-Source Browser Extension for Google Docs Customization | docsafterdark.com

- Created a theming extension for Google Docs with 120,000+ weekly users across Chrome, Firefox, Edge, and Opera
- Engineered scalable CSS architecture, utilizing modular stylesheets and JavaScript-controlled CSS variables
- Integrated browser APIs to handle real-time DOM manipulation, user preferences, and background scripting
- Managed customer support across email, GitHub Issues, and extension storefronts, addressing user issues and feedback
- Designed a cohesive brand identity, including promotional artwork and homepage

Chesster — *CSS, TypeScript, HTML, Webpack* June 2023 – August 2023

Chess Engine (AI) & Web Interface | waymondrang.com/chess

- Engineered performant TypeScript chess engine, outperforming chess.js by 32x in move generation tests
- Implemented NegaScout & alpha-beta algorithms with variable depth, search visualization, and move history
- Leveraged Web Workers API to parallelize AI computations and enable a responsive and animated web interface

Treevia — *Node.js, React, Socket.IO, TypeScript, CSS, HTML, GCP* January 2023 – March 2023

Full-Stack Real-Time Multiplayer Trivia Game

- Leveraged Google Cloud Platform for load-balanced and secure HTTPS networking, CI/CD, and VM servers
- Led project development and architected prototype deployment pipeline using GitHub Actions
- Designed and implemented mobile-optimized host and player web clients with custom lobbies and team leaderboard

neu — *C++, OpenGL* October 2024 – Present

3D Rendering Engine with Entity-Component System | github.com/waymondrang/neu

- Implemented skeletal animation, including mesh skinning, vertex blending, and rigid body physics (Jolt Physics)
 - Developed a Newtonian particle physics system to simulate dynamic particle emitters and cloth dynamics
 - Built a forward rendering pipeline with support for multiple light sources, instanced rendering, and shadow mapping
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SKILLS

Languages C++, TypeScript, JavaScript, HTML/CSS, Python, GLSL, Java, SystemVerilog, MATLAB

Libraries & APIs Node.js, React, Next.js, OpenCL, OpenGL, Express.js, MongoDB, JavaFX

Technologies Google Cloud Platform, Docker, GitHub Actions, CMake, webpack, Linux, Android, Git