

ROHAN MUDUMBA

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ABOUT

Highly motivated graduate in Astrophysics turned software engineer looking to contribute advanced problem solving skills to a challenging career in the always-improving and dynamic software engineering industry. Passionate about breaking down real world problems into actionable solutions.

EDUCATION

2021 Cambridge University: Bachelor's in Natural Sciences – Astrophysics (Physics / Math)

2023 App Academy: Fullstack Software Engineering Course

CODING PROJECTS

3D Physics/Render Engine

(JavaScript) [Github](#) | [Live](#)

- Utilized coordinate transformations in linear algebra to allow for moveable/turnable cameras and objects, used painter's algorithm for display priority in order to ensure accurate scenes
- Developed JSON storage schema and corresponding parser to handle complex data model with multiple levels in order to store scenes and retrieve them from localStorage
- Deployed demo of engine on github with ability to drop and shake objects, as well as free camera movement in order to showcase the engine

Live Shogi (Japanese Chess)

(JS/React/Redux/Ruby/Rails/PostgreSQL/AWS S3) [Github](#) | [Live](#)

- Incorporated websockets and Action Cable for live game rendering, chat, and matchmaking in order for a more responsive user experience
- Implemented User Auth through cookies, error handling to ensure only valid user can move
- Enabled Clock sync from backend to frontend to ensure accurate timer, even on refresh
- Utilized AWS S3 to allow users to upload profile pictures while reducing server load
- Administered an Elo system in order to display user growth and current rankings
- Hosted deployment on render.com along with a PostgreSQL database. Redis database for websockets to ensure fast responses in game moves, chat, and matchmaking

Social media for presentations

(JS/Node.js/Express.js/MongoDB/React/Redux) [Github](#) | [Live](#)

- Led team of 4 Software Engineers, reviewed pull requests, contributed 30k/50k lines of code
- Generated JSON storage schema for presentations and their components' properties, along with two parsers, allowing parsing into both editable components or static components
- Fashioned methods for component movement and resizing with emphasis on user experience

ELECTRICAL ENGINEERING PROJECTS

- Designed and prototyped a computer peripheral from scratch (Circuit Board/Housing), End to End design with vendor negotiation

TECHNICAL SKILLS

- Ruby, Python, JavaScript, LaTeX, React, Redux, Rails, Node, Express, MongoDB, Pandas, Numpy, Matplotlib, Matlab, SQL, KiCad, Fusion360, Github, Postman, AWS S3

LANGUAGES

- English - Native
- Japanese - Fluent