Erin Yoo

Software Engineer

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Education

The Master's University — May 2025

- B.S. in Computer Science, emphasis in Artificial Intelligence — Santa Clarita, CA

Fullstack Academy (Web Development) — May 2024-Aug. 2024

- Certificate of the Fullstack Live Online Software Engineering Immersive — (Remote)

Relevant Courses

Calculus 2, Computer Vision, Artificial Intelligence, Machine Learning, Natural Language Processing, Database Management Systems, Operating Systems, Networking Principles and Architecture

Technical Skills

Languages: JavaScript, Python, SQL, HTML, CSS
Frameworks & Libraries: Frontend (React, Redux Toolkit), Backend(Node.js, Express, Prisma), OpenCV, Bootstrap
Database: Relational (PostgreSQL, MySQL)
Dev. Tools: Version Control (Github, Git), IDE (VSCode)

Projects

Treasure Hunt - Artificial Intelligence Course — Dec. 2024 - Jan. 2025

- Developed a reinforcement learning AI game in **Python**, enabling an AI agent to compete against a human player in a strategic environment,resulting in an interactive platform where participants aim to collect treasures while avoiding traps on a grid.
- Implemented an **AI optimization technique** that learns from reinforcement learning and positive feedback loops, refining decision-making processes to reduce error rates effectively.
- Formulated a **Q-learning** algorithm enhanced by an epsilon-greedy strategy, **training the AI model 10,000** times, integrating **Reinforcement Learning** to boost decision-making and gameplay performance.
- Integrated the game landscape into a **2D grid architecture**, marking positions as treasures ('T') and vacancies ('-').
- Managed state-action rewards and debugged **AI-driven** decision processes.

Lace Up - Fullstack Academy Capstone Project — Jul. 2024 - Aug. 2024

- Owned an entire **Software Development Life Cycle**, by designing and implementing a **full-stack e-commerce web application** featuring user authentication, product browsing, as well as detailed product pages.
- Evaluated **technical requirements** and researched adequate technologies, utilizing clean code principles to maintain organization.
- Constructed the **frontend** using **React** and **Redux**, orchestrating global state management through **RTK Query** with state slicing to streamline **API** requests, while incorporating **11 RESTful API** endpoints focused on authentication and product retrieval, ultimately reducing the data retrieval time.
- Developed the **backend** using **Express** and **Prisma ORM**, applying data mapping techniques to structure a **PostgreSQL** database that manages users, products, and orders across seven tables, improving data retrieval efficiency.
- Deployed the frontend on **Netlify**, integrating **React** to improve user interface responsiveness, and maintained the backend on **Render**.
- Enforced **security practices** in application development by implementing simple email/password authentication to safeguard user data and communication channels, reducing the risk of data breaches and unauthorized access.

Emotion Detection - Computer Vision Course — Apr. 2024

- Engineered an **emotion detection system** that processes video footage to identify various human emotions, using **OpenCV** for facial recognition algorithms and image segmentation, and improved the model with **Local Binary Patterns Histogram** for texture analysis and contrast enhancement, training it on a dataset of **250 images per emotion.**
- Implemented **real-time emotional recognition** training to discern five specific emotions from video frames, incorporating **OpenCV**, and displayed classified facial emotions bolstered by their confidence metrics.
- Refined the emotion detection feature, recalibrating and stabilizing unusually high confidence levels to **5%**.