JONATHAN MACOCO

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EDUCATION

Masters of Science, Computer Science Expected: May 2026
San José State University, San José, California
- GPA: 3.0

Bachelor of Science, Computer Science May 2023
Chico State University, Chico, California
- GPA: 3.2

TECHNICAL SKILLS

Programming Languages: C, C++, Python, JavaScript, Java, R, HTML5, CSS, Dart
Tools/Technologies: PyTorch, Git, AWS, GCP, Flutter, React, Django, Docker, OpenMP, MPI, Tailwind, Bootstrap, Numpy, TensorFlow
Database: SQL, MongoDB, Firebase
Skills: Database Design, Agile, Scrum, Problem Solving, Communication, Quantitative Analysis, OOP

EXPERIENCE

Full Stack Software Engineer, Coinable, Remote Feb 2024 - June 2024
- Implemented email verification system utilizing Amazon Simple Email Service, resulting in reliable and secure communication within seconds for a seamless user authentication
- Devised a RESTful API with JavaScript, Express, and Postman for efficient retrieval, storage, and updating of database records, delivering streamlined data management and scalability
- Formulated and implemented database architecture in MongoDB resulting in efficient data management and organization
- Built and managed a reverse proxy server using NGINX to efficiently route HTTPS requests to backend MongoDB database, optimizing performance and security

Computer Science Expert AI Training, Remotask, Remote May 2023 - Feb 2024
- Trained machine learning models how to code in Python and C, resolving issues during training
- Conducted thorough code evaluations for machine learning models, increasing efficiency
- Documented and delivered clear explanations of model output, resulting in model improvement

PROJECT EXPERIENCE

Deep Reinforcement Learning Agent
- Applied Deep-Q Network algorithm with a CNN using PyTorch to train RL agent to learn and play the Hex game
- Built custom game environment leveraging PettingZoo API, ensuring accurate state representation and reward mechanic
- Employed batch training to improve efficiency during the DQN training process
- Implemented epsilon decay strategy balancing exploration and exploitation

Distributed Collaborative Code Editor
- Addressed major challenges of a distributed system focusing on fault tolerance, consistency, network latency, and synchronization, by implementing Vector Clocks, CRDT's, IP Hashing, and Load Balancing
- Utilized AWS Load Balancer and MongoDB to distribute traffic and database queries, ensuring scalability and efficient resource utilization
- Developed an API deploying Express and Axios handling GET, POST, and WebSocket request for seamless communication and efficient data updates
- Built real-time distributed code editor using React enabling multiple users to edit documents and collaborate

Plant Social
- Led collaboration as a scrum leader in creating and building a social application, ensuring sprint deadlines were met
- Designed intuitive front end interfaces with Flutter enhancing UI
- Integrated Firebase functionality to efficiently retrieve, manage and store user data, producing a seamless user experience
- Developed camera functionality, sending image data to MobileNetV3Small machine learning model used to classify plant images with high accuracy