Michel Karam

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Learn more about me: michel-karam.dev

Projects

Prep&Count: 3-in-1 Fitness AI Application | *React Native, Node.js, Express, MongoDB, JavaScript, RESTful APIs*

- Implemented a comprehensive fitness platform combining **workout tracking**, **nutrition logging**, and **AI-driven meal planning** through seamless integration with the OpenAI API.
- Architected **scalable REST APIs** and robust **backend infrastructure** to support real-time data sync, secure user sessions, and advanced analytics.
- Integrated intelligent meal plan generation by leveraging **AI outputs** and interfacing with a third-party **recipe API** for dynamic, personalized recommendations.
- Crafted an intuitive and responsive **UI/UX experience** with modular React Native components to drive user engagement and mobile performance.

Lead Dev - Wumpus World: ML Frameworks | *Python, NumPy, Reinforcement Learning, A*, Genetic Algorithms*

- **Led a team of 5** to build a modular AI simulation with independent algorithms derived from the Wumpus Board Framework.
- Engineered a fully testable API environment for the Wumpus World problem, automating 1,000 board validation cycles per seed to guarantee solvable maps.
- Trained Genetic Algorithm agents across **2,000 generations and 200 member populations** evaluating 400,000 state action evaluations.
- Developed a tabular Q-Learning RL agent over **20,480 Q-Entries reaching 85% survival and 70% gold retrieval accuracy after 50 episodes** with shaped rewards.

Skills

Programming Languages: C, C++, Python, Java, JavaScript, Assembly x86/x86-64, Lua, HTML, CSS

Frameworks & DevTools: React, React-Native, Node.js, Expo, VS Code, Vim, RESTful API, Git, NASM, Modern C++, GDB, Valgrind, PostgreSQL, MongoDB

Core Competencies: Functional Programming, Data Structures, Algorithms, Space & Time Complexity, Object-Oriented Programming (OOP), AI/ML Integration, Functional & Structural Testing, Low-Level Debugging

Power Skills: Brain Storming, Attention to Detail, Organization & Time Management, Dependable & Responsible, Active listening

Education

Portland State University — *Portland, OR*

Bachelor of Science in Computer Science — ***Expected: June 2026***

- **GPA: 3.89**
- **Key Coursework Operating Systems, Data Structures, Algorithms & Complexity, Database Management Systems, Linear Algebra**