Matthew Leung

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Education

University of California, San Diego — La Jolla, CA
Bachelor of Science in Computer Engineering — *September 2022 – Present*

- GPA: 3.98

Experience

Full-Stack Intern — July 2021 – September 2021
PilotCity

- Engineered a Grammarly-styled Google Chrome extension to localize and simplify private and user policies, achieving Flesch-Kincaid grade level scores of 65+
- Leveraged natural language processing to provide real-time edits and suggestions for improved clarity, shortening revision times by 20%
- Facilitated code reviews and closed 20+ pull requests from other interns
- Directed a team of 5 front-end developers and collaborated with other teams

Projects

Lava LiDAR Game | *Arduino, Python, C++* — April 2025 – June 2025

- Integrated a LiDAR sensor with an Arduino Uno via I2C communication to enable real-time player tracking in an interactive, movement-based game
- Developed a serial communication pipeline to stream LiDAR data from an Arduino Uno to a Python-based game engine for responsive motion control
- Applied knowledge of embedded systems, serial data protocols, and sensor integration to bridge hardware and software components in a real-time application
- Awarded 1st place at UCSD's IEEE Quarterly Projects Showcase (Spring 2025)

Procedural City Generator | *Godot, C#, GLSL* — August 2023 – January 2025

- Constructed a Godot project that enable users to explore a procedurally infinite, customizable city
- Harnessed Voronoi noise and 7 vertex shaders to generate immersive and natural city layouts
- Engineered a robust architecture that enables users to quickly customize the generated environment by modifying 10 generation variables

Triton Workout Planner | *React, MongoDB, TypeScript, Bootstrap* — September 2024 – December 2024

- Integrated frontend and backend systems and set up a robust client-server architecture, supporting features such as workout plan creation, goal setting, and progress tracking
- Authored 10+ test cases for a variety of frontend components to ensure robust and thorough CI/CD testing
- Coordinated project updates, led weekly sprint planning meetings, and assisted teammates with debugging
- Resolved 51 issues and pull requests and conducted code reviews, providing constructive feedback to improve code quality and efficiency

Discord Bot | *PostgreSQL, Google Cloud Platform, Node.js, JavaScript, Python* — August 2020 – June 2022

- Deployed a fully functional Discord bot that runs 23/7 with minimal downtime
- Synthesized AI language models that simulate user behavior trained on approximately 300,000 messages by fine-tuning GPT-2 models
- Managed PostgreSQL databases to maintain leaderboards and store information for 25+ users

Technical Skills

Languages: Java, Python, C/C++/C#, SystemVerilog, GLSL, SQL (Postgres), TypeScript, JavaScript, HTML/CSS
Frameworks/Runtime Environments: React, Node.js, Bootstrap, Flask, JUnit
Developer Tools: Git, MongoDB, Google Cloud Platform, Heroku, VS Code, Hugging Face, Unity, Godot
Libraries: pandas, NumPy, PyTorch, transformers
Hardware Skills: Circuit analysis, digital systems design, linear systems, LTspice, ModelSim