Roye	Fang
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royefang01@gmail.com • 626-709-7268 royefang.github.io • linkedin.com/in/royefang

Education	University of California, Los Angeles B.S. Computer Science, GPA: 3.602 Anticipated June 2023
Technical Skills	Languages: Python, C/C++, SQL, JavaScript, Bash Technologies: Linux, Git, Flask, React.js, MySQL, Arduino, Unity
Professional Experience	 The Aerospace Corporation - Technical Intern Supported the Visualization and Immersive Technologies Dept. (VITD), creating animations, AR/VR experiences, visualization software, and Unity/web apps for the space enterprise Introduced a Flask RESTful API backend service and web app interface for astronomical time system translations using Earth Orientation Parameters data from MySQL database Designed and implemented a portfolio website using React.js to centralize information about department news, projects, capabilities, and contact information Improved an on-campus touchless video wall application using Unity game engine and C# scripts to display PDFs, local webpages, and an interactive calendar
Practical Experience	 UCLA IEEE (Institute of Electrical and Electronics Engineers) Strengthened practical programming skills in embedded systems and electrical engineering projects through Micromouse and OPS (Open Project Space) Soldered and programmed an autonomous maze-solving robot and developed data structures in C to record maze environment, robot positioning, and calculate Manhattan distances in order to execute flood fill algorithm using a circular queue Coded a "Red Light, Green Light" game between 2 Arduinos with UART protocol Transcribed full-length piano pieces/pop songs into code for an 8-bit Arduino music player
Projects	Tu.Can - Full Stack Messaging Web Application - Programmed an instant message application using MERN stack with user authentication - Built frontend components for login page, registration page, and various color themes - Designed document schemas for accessing and storing user, chatroom, and messaging data - Implemented API routes to update MongoDB database in real time with pusher middleware TI-RSLK - Autonomous Line-Following Car - Programmed PID feedback loop in C++ for TI-RSLK robot to follow 2 arbitrary paths - Conducted sensor fusion with test data in Excel to normalize 8 IR sensors for continuously recording robot positioning, allowing for precise and instant adjustments along the path

Mori - Arduino Memory Game

May 2020

- Built a memory game in Arduino/C++ by flashing strings of numbers in the console

Scored fastest overall completion time across both paths in a 20-person lab section

- Programmed logic to track game state, player reaction times, and overall score
- Devised customizable settings for string length, memorizing time, and game length
- Plotted in Python to visualize relationships between game settings and player performance