# Roye Fang

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| **Education** | **University of California, Los Angeles** | Anticipated **June 2023** |
| | B.S. Computer Science, GPA: 3.602 | |

**Technical Skills**

**Languages:** Python, C/C++, SQL, JavaScript, Bash
**Technologies:** Linux, MySQL, Arduino, React.js, Git, Unity

**Professional Experience**

**The Aerospace Corporation –** *Technical Intern* — **Jun 2021—Sep 2021**

- 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)** — **Sep 2019—Present**

- Strengthened practical programming skills in embedded systems and electrical engineering projects through Micromouse and OPS (Open Project Space)
- Collaborated with 2 teammates to build an autonomous maze-solving robot. Developed data structures in C to record maze environment, robot positioning, and calculate Manhattan distances in order to implement flood fill algorithm
- Coded a "Red Light, Green Light" game between 2 Arduinos with UART. Transcribed full-length piano pieces/pop songs into code for an 8-bit Arduino music player

**Projects**

**Tu.Can** – *Instant Messaging Web Application* — **Jan 2021—March 2021**

- Collaborated with 4 peers to program a real-time web application using MERN stack
- Built frontend components for login page, registration page, and various color themes
- Designed document schemas for accessing/storing user, chatroom, and messaging data
- Implemented API routes for client-side triggered events to update MongoDB using Express

**TI-RSLK** – *Autonomous Line-Following Car* — **May 2020**

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

**Mori** – *Arduino Memory Game* — **May 2020**

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