

# Tian (Tim) Xiong

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## EDUCATION

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### University of California, Los Angeles

*Bachelor of Science, Mechanical Engineering, GPA: 3.68, Dean's List - Fall 2021*

Los Angeles, CA

*Expected June 2024*

**Relevant Coursework:** Feedback and Control Systems, Mechanisms and Mechanical Systems, Advanced Statics and Strength of Materials, Introduction to Manufacturing Processes, Combustion Systems, Dynamics of Particles and Rigid Bodies, Electrical and Electronic Circuits, Elementary Fluid Mechanics, Introduction to Data Structures

## EXPERIENCE

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### Fuel System Assembly – UCLA FSAE Powertrain Team

Oct 2021 – Present

*Design Team Member*

*Los Angeles, CA*

- Conceptualized and manufactured new fuel tank filler neck, implementing manufacturing optimization techniques to improve efficiency and compliance with FSAE guidelines, advancing timeline by 2 weeks
- Conducted extensive research on various material properties and performed testing to determine the optimal material for fuel tank manufacturing, balancing weight, cost, and performance, reducing the volume by 25%
- Designed and performed Finite Element Analysis (FEA) on fuel tank mounting tabs to ensure the stability of the fuel tank during dynamic applications and to validate the integrity of the design
- Developed baffle designs and applied Computational Fluid Dynamics (CFD) simulations to optimize their efficacy

*New General Member*

Aug 2021 – Oct 2021

- Conducted extensive research and spearheaded the design and integration of a 3-way thermostatic valve into the cooling system as a new member project
- Efficiently organized and orchestrated team meetings with fellow new members to discuss design progress and delegated task to advance design timeline by 1 week
- Contributed to the rebuilding of the engine and limited-slip differential, including disassembly, cleaning, and reassembly of components in preparation for dynamometer testing

### Read Write Discover Program

Mar 2019 - Aug 2019

*Volunteer Coordinator*

*San Jose, CA*

- Orchestrated and coordinated a community-based English tutoring program for K-8 students in partnership with the local library, aimed at increasing literacy rates among students in the area
- Proactively recruited and trained high-school volunteers to serve as tutors and regularly communicated with tutors to provide guidance and support to customize and improve lesson plans to meet the needs of individual students

## PROJECTS

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### Fuel Tank Baffles for FSAE Vehicle | MATLAB, SOLIDWORKS, Python

Aug 2022 – Jan 2023

- Conducted in-depth research and led the design and implementation of fuel tank baffles to mitigate fuel sloshing and starvation during dynamic events
- Performed Computational Fluid Dynamics (CFD) simulations using SOLIDWORKS to rigorously validate the design of fuel tank baffles
- Developed and applied further extensive real-world testing procedures to validate the static and dynamic baffling systems and used MATLAB and Python to analyze the data
- Implemented results to optimize and finalize a design to prevent fuel starvation and improve the overall performance of the fuel system, increasing the theoretical damping ratio to 0.86

### Arduino-Based Line Follower Robot | Arduino IDE, MATLAB

Aug 2020 - Dec 2020

- Designed, constructed, and programmed a vehicle control system utilizing an array of photoresistors and IR LEDs to interpret and normalize data, determining the vehicle's position relative to the desired path, resulting in enhanced navigation and path tracking capabilities
- Assembled and wired electrical circuits and integrated them with a microcontroller to control and operate the vehicle, resulting in improved system reliability and ease of use
- Implemented a Proportional-Integral-Derivative (PID) controller to enable the vehicle to dynamically adjust its trajectory and follow a black line with improved precision and stability

## TECHNICAL SKILLS

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**Software:** MATLAB, SOLIDWORKS(CAD, FEA, CFD, CAM), Siemens NX, VS Code, Visual Studio

**Programming Languages:** C++, Python, Arduino

**Languages:** English, Chinese (Cantonese, Mandarin), Spanish

**Manufacturing:** Rapid Prototyping (3D printing), Machining (Lathe, mill, CNC), shop tool usage