# Don **Le**

COMPUTER ENGINEERING STUDENT · WEB DEVELOPER

*California, United States of America*

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## Objective

Highly motivated Computer Engineering student with research experience in computer vision and embedded systems, seeking an opportunity to apply technical skills in software/hardware development. Open to relocating across California and neighboring states for opportunities.

## Technical Skills

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| **Languages:** | C, C++, Tex, Python, Rust, Javascript, HTML/CSS, Java, Matlab |
| **Tools and Frameworks:** | Git, g++, GDB, MSVC, Make, CMake, Linux, VMWare, OpenCV, CUDA, MPI, ORB-SLAM, Next.js, Tailwind CSS |

## Education

### Mount San Antonio College
*California, USA*

BACHELOR OF SCIENCE IN COMPUTER ENGINEERING - TRANSFER — *Aug. 2022 - Jun. 2025*

Cumulative GPA of 3.95/4.0. Expected to transfer to University of California in August 2025. Relevant coursework: C/C++ and Advanced C++, Java, Data Structure and Algorithms, Assembly (x86), Discrete Math, Linear Algebra, Differential Equations, Engineering Physics I, II, III, Electrical Engineering.

## Work Experience

### California Polytechnic State University, Pomona
*Pomona, California*

COMPUTER VISION RESEARCH INTERN — *Jun. 2024 - Sep. 2024*

- Utilized **MPI** for multi-core processing, **OpenMP** for multi-threading, and NVIDIA **CUDA** to accelerate feature detection, seam finding, image processing, and stitching algorithms, enabling real-time image processing on drones with **OpenCV** C++.
- Boosted image processing speed by **300%** for a dataset of 64 4K images compared to the CPU-based approach.
- Reduced parallel processing costs by **61%** through the integration of CUDA and MPI, outperforming the CPU-only implementation.

### California Polytechnic State University, Pomona
*Pomona, California*

COLLISION AVOIDANCE AND DETECTION RESEARCH ASSISTANT — *Aug. 2024 - Present.*

- Collaborated with a team of senior engineering students, led by faculty (including a Master's and PhD advisor) to develop and implement a collision avoidance and detection system on drones for precise indoor navigation.
- Utilized **Gazebo**, **Ubuntu 18**, and **ORB SLAM3** for stereo camera trajectory computation and sparse 3D reconstruction of the drone's environment.
- Optimized object detection by integrating **ORB SLAM3** with **YOLOv4** in C++, improving runtime performance by **50%** over the original Python version and achieving a detection confidence rate of **90%**.

### Mount San Antonio College
*Walnut, California*

MATH, PHYSICS, AND COMPUTER SCIENCE TUTOR — *Jan. 2024 - Present.*

- Delivered personalized tutoring in C++, Differential Equations, Calculus, Engineering Physics, and Linear Algebra, focusing on student-specific needs.
- Led after-class tutoring sessions for a class of 35 students in Differential Equations; authored and shared comprehensive study notes in **LaTeX**.

## Technical Projects

### Physics Engine

C++, CMAKE, MSVC, SFML — *Jan. 2025 - Present*

- Developed a custom physics engine from scratch in C++, utilizing SFML for real-time rendering and visualization
- Implemented multiple numerical integration methods, including Euler (explicit/implicit), Verlet, and Runge-Kutta (RK4), to accurately simulate motion; integrated rigid-body collision detection for realistic interactions.

### Webs-for-Clubs, SMACS

JAVASCRIPT, NEXT.JS, TAILWIND CSS — *Sep. 2024 - Present.*

- Collaborated with a team of developers to create static and dynamic, user-friendly, and maintainable websites for various clubs at local college.
- Developed and maintained websites using Node.js, Next.js (React.js framework), and Tailwind CSS to deliver information and post updates.

### Chladni Patterns Generator | **report here**

PYTHON, NUMPY, SCIPY, PARTIAL DIFFERENTIAL EQUATIONS — *Feb. 2024 - May. 2024*

- Engineered a Python script to simulate Chladni patterns by solving eigenvalue problems derived from partial differential equations.
- Implemented algorithms to search for an **unlimited** number of patterns based on the wave equation model on square and circular domains.

## Publications

### American Institute of Aeronautics and Astronautics (AIAA) | **paper here**
*Orlando, Florida*

RESEARCH IN PARALLEL COMPUTING AND IMAGE PROCESSING ON DRONES — *Jan. 6 2025 - Jan. 10 2025*

Rick Ramirez, John Korah, Subodh Bhandari, Yuqi Chen, Du D. Le, and Tu Nguyen. "Accelerated Image Stitching Via Parallel Computing for UAV Applications". Proceedings of the AIAA Conference 2025, 2025, Florida, USA, 10 January 2025.

## Extracurricular Activity

### Mathematics Club and SMACS (Science and Mathematics Applied to Computer Science)
*Walnut, California*

MEMBER — *Feb. 2024 - Present.*

- Vice President of Math Club: Organized LaTeX workshop, a markup language used to produce professional scientific diagrams and papers.
- Secretary of SMACS: Organized hackathon preps. Hosted workshops in web development and Github.