

Don D. Le

Computer Engineer • Software Developer

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EDUCATION

University of California, Los Angeles (UCLA)

Dec. 2027 (Expected)

Bachelor of Science, Computer Science and Engineering—Minor in Mathematics

GPA: 3.96/4.00

- Activities: Putnam Mathematical Competition, ACM, IEEE, UMSA
- Coursework: Data Structures & Algorithms; Engr Physics I, II, III; Microcontrollers & Embedded C++; Electrical Circuits Analysis; C++ and Advanced C++; Java OOP; Assembly Language [Intel x86]

SKILLS

Specialty: High-performance Computing on GPU, PDEs Modeling, System Programming, Graphics Programming

Languages: C++, C, Python, CUDA, Rust, TeX, JavaScript, Assembly [Intel x86]

Tools: CMake, GNU Make, git, CUDA Toolkit, Boost, GCC, MSVC, vcpkg, SIMD (Intel/AMD), Conda, Linux

Frameworks & Libraries: PyTorch, NumPy, Scipy, OpenCV, ORB SLAM 3

EXPERIENCE

Research Assistant, UAV Lab (Department of Aerospace Engineering)

Sep. 2024 - Aug. 2025

California State Polytechnic University, Pomona

Pomona, CA

- Engineered drone trajectory estimation and 3D mapping system using ORB SLAM3 and Master-SLAM, achieving 85% environment reconstruction accuracy
- Integrated YOLOv8 and SLAM for object-aware pathing; C++ optimization improved inference speed by 50% over Python baseline
- Delivered real-time object detection pipeline for embedded systems, supporting autonomy in GPS-denied environments

Computer Vision Research Intern

Jun. 2024 – Aug. 2024

California State Polytechnic University, Pomona

Pomona, CA

- High-performance UAV image processing using MPI (multi-core processing), OpenMP (multi-threading), and CUDA ORB/SURF using OpenCV C++ with GPU module
- Improved processing speed by 300% compared to the CPU-based approach for a dataset of 500 4K image
- Reduced parallel processing costs by 61% through the integration of CUDA and MPI

Math, Physics, CS Tutor & Math Teaching Assistant

Feb. 2024 - Aug. 2025

Mt. San Antonio College

Walnut, CA

- Developed a structured, personalized tutoring curriculum for C++, engineering physics, and mathematics that increased overall student participation and understanding.
- TA: Led after-class tutoring sessions for a class of 35 students in Differential Equations and Linear Algebra; authored and distributed comprehensive study notes in \LaTeX

TECHNICAL PROJECTS

3D Robotics Engine and Simulator | CMake, C++, MSVC, OpenGL | [github](#)

Feb. 2025 - Present

- Created a high-performance 3D physics engine from scratch in C++
- Implemented advanced numerical integration methods (Euler, Verlet, RK4) to ensure accurate motion simulation; integrated rigid-body collision detection, rotational dynamics, and soft-body physics for realistic interactions
- Designed and integrated a high-performance 3D model importer. Utilized shaders for GPU-accelerated rendering, significantly improving computation speed and real-time performance.

Parallel Ray and Path Tracer | C++, CUDA, OpenGL | [github](#)

Aug. 2025 - Present

- Designed and implemented a high-performance ray tracer from scratch in C++, optimizing for efficiency and accuracy.
- Utilized CUDA for GPU-accelerated rendering and SIMD for vector optimizations, significantly improving computation speed and real-time performance.

Chladni Patterns Generator | Python, Numpy, Scipy, PDEs | [github](#), [paper](#)

Feb. 2024 - May. 2024

- A scientific computing project to search and simulate an unlimited number of Chladni patterns by solving eigenvalue problems derived from the 2D wave equation on both Cartesian and Polar coordinates
- Optimized computational performance by applying NumPy vectorization to eigenvalue solvers and matrix operations.

CONFERENCE PROCEEDINGS

American Institute of Aeronautics and Astronautics (AIAA) | [link](#), [paper](#)

Jan. 3, 2025

R. Ramirez, J. Korah, S. Bhandari, D. D. Le, Y. Chen, and T. Nguyen, “Accelerated image stitching via parallel computing for UAV applications,” in *Proc. AIAA SCITECH 2025 Forum*, Orlando, FL, USA, Jan. 2025.