

DUONG DUY NHAT MINH

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EDUCATION

LE QUY DON HIGH SCHOOL FOR THE GIFTED

Major in English

*Ba Ria - Vung Tau Province
Jul. 2023 - Present*

- GPA: 4.0 (Grade 10; Grade 11)
- IELTS Academic: 8.5 (Listening: 9.0; Reading: 9.0; Writing: 7.5; Speaking: 8.5)
- SAT: 1490 (Math: 750; Evidence-based Reading and Writing: 740)
- Third Prize, National English Competition

TECHNICAL EXPERIENCE

ASTROCELERATE

Founder & Developer

Nov. 2024 - Present

GitHub: <https://github.com/ButteredFire/Astrocelerate-public>

Astrocelerate is Vietnam's first commercial high-performance orbital mechanics simulation engine, with applications in aerospace engineering education and mission planning.

- Engineered 15,000+ line-of-code infrastructure built on Vulkan and custom physics integrators (RK4, Symplectic Euler).
- Engine achieves 260+ FPS on low-end computers under complex real-time spacecraft maneuver simulations, accurate satellite orbits, spacecraft maneuvers, and launch-to-recovery trajectories.
- Designed time-step system for frame-stable 2-body to N-body physics simulation under variable loads.
- Led all aspects of development, including technical research, system design, graphics implementation, and long-term roadmap planning.
- Documented and modularized the project to allow for future team expansion, plugin-based development, and integration with external physics libraries.

RESEARCH COLLABORATION WITH UNIVERSITY STUDENT GROUP

Remote

Freelance Data Analyst

Oct. 2023 - Jan. 2024

Labor Market Forecasting: Built ML pipeline to predict salary trends from Vietnam's largest recruitment platform.

- Collaborated with 3 undergraduate students to support data operations for a university-level research project in labor market analytics.
- Built custom Python scripts to crawl and clean large-scale job-listing dataset of over 690 entries from online recruitment platform TopCV (Vietnam's largest job listing platform).
- Applied data preprocessing with the Underthesea library, exploratory data analysis (EDA), and visualization techniques (Numpy, Pandas, Matplotlib) to extract insights.
- Implemented and tuned machine learning models (Linear Regression, Random Forest) to estimate salary expectations based on job experience and demand metrics.
- Presented key findings through plots and summary statistics used in the group's final 95-page report.

LEADERSHIP AND ACTIVITIES

ORIVIET AEROSPACE

Founder & Sole Proprietor

Feb. 2025 - Present

Founder of Vietnam's first aerospace software startup dedicated to aerospace infrastructure and simulation technologies.

Oriviet Aerospace serves as the national testbed for sovereign space simulation tools, with Astrocelerate as its flagship engine.

- Developed real-time, high-performance scientific simulation tools and embedded software for aerospace education and early-stage space technology R&D.
- Designed modular software architectures to support scalability and integration with external systems.

KHRONOS GROUP

Remote

Open-source Contributor - Khronos Vulkan SDK

Jul. 2025

Contributor-level issue identification and diagnostic work for the Vulkan graphics API, used globally in real-time rendering and GPU-based simulation.

- Identified a critical validation bug in Vulkan's handling of combined image sampler descriptor arrays with variable descriptor count bindings.
- Created a reproducible test case that was incorporated into LunarG's internal test suite.
- Contribution led to an SDK-level fix in Vulkan 1.4.321, impacting global GPU-based simulation and real-time rendering tools.
- Acknowledged by core Vulkan contributors for clarity, technical accuracy, and reproducibility.

BA RIA - VUNG TAU LIBRARY

Community Language Educator

Ba Ria - Vung Tau Province

Jun. 2024 - Aug. 2024

- Designed and led ESL sessions for 50+ primary students, boosting language retention and engagement through interactive storytelling and gamified instruction.
- Managed 5-person instructional team and co-developed curriculum with the founder of The Future English Center.

AWARDS AND SCHOLARSHIPS

Third Prize, National English Competition (2024-2025)

Gold Medalist, 28th & 29th Southern English Olympiad

First Prize, Ba Ria - Vung Tau Provincial Contest for the Gifted in English, Division: Grade 12 (Received through selection for the National English Team)

Second Prize, Ba Ria - Vung Tau Provincial Contest for the Gifted in English, Division: Grade 11

Certificate of Completion, Volunteering at Ba Ria - Vung Tau library

Impact Creativepreneurs Fellow Certificate, Impact Creativepreneurs Summit (2025)

CS50x Certificate, Harvard CS50x Introduction to Computer Science

SKILLS AND INTERESTS

Languages: C, C++, Python, JavaScript, TypeScript

Libraries & Frameworks: Vulkan API, Dear ImGui, Matplotlib, Seaborn, Scikit-learn, Pandas

Tools: Git, Visual Studio, RenderDoc, Address Sanitizer

Concepts: Numerical integration, orbital mechanics, physics engines, data visualization, real-time simulation

Interests: Aerospace systems engineering, low-level graphics programming, high-performance computing, simulation fidelity, Mars colonization