Nguyen Van Tien

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Summary

I am a final year Computer Science student at Ho Chi Minh City University of Technology with a strong interest in Computer Vision and its real world applications, particularly in agriculture and automotive systems. I am passionate about applying advanced machine learning and deep learning techniques to solve practical problems. My goal is to pursue a fully funded Master's program to further strengthen my research skills and build a solid foundation for an academic and research career.

Education

BS — **Ho Chi Minh City University of Technology**, Computer Science — Sep 2022 – Sep 2026 (Expected)

- **GPA:** 3.1/4.0
- **Proficient in:** Computer Vision, Data Structures and Algorithms, Computer Networks

Publication

Ecological Informatics (Submitted) — Jan 2026
Integrating Graph-Based Spatial Encoding with Temporal Fore- casting to Unveil Mangrove Canopy Dynamics under Coastal Environmental Change

Scientific Reports (First Author, Under Review) — Nov 2025
High-Throughput Morphological Analysis of Barley Grains using Deep Learning-Driven Key Point Detection

Projects

Interactive 3D Shape Viewer — github.com/computer_graphics

This project demonstrates fundamental computer graphics concepts by building an interactive viewer for 3D geometric primitives with real-time rendering.

- 5 rendering modes (Flat, Gouraud, Phong shading, Wireframe, Texture mapping)
- GUI with trackball camera controls for rotation, zoom, and dynamic color/texture switching
- Technique Used: OpenGL, GLSL Shaders, Python.

3D Airway Segmentation from CT images — drive.google.com

Aims to improve airway segmentation accuracy by proposing a modified 3D U-Net architecture combined with the Project & Excite attention mechanism

- Achieved an 8% increase in accuracy compared to the baseline method.
- Ongoing Capstone Project.
- Technique Used: 3D U-Net, PyTorch.

Research

High-Throughput Morphological Analysis of Barley | Team 2 — github.com/barley-morphology-analysis

This study aims to develop a high-throughput automated system for quantifying barley morphological traits, including area and length, by utilizing advanced deep learning models.

- Research Intern at Jeju National University, Republic of Korea.

- Created a dataset comprising approximately 10,000 annotated barley grains.
- Technique used: Google Colab, YOLOv11, OpenCV.

Mangrove Modeling Prediction | Team 4

Analyze the spatial and temporal dynamics of Mangrove forests in five specific locations along the Red Sea coast of Saudi Arabia from 2019 to 2023. The study aims to

- Investigate mangrove health using NDVI (Normalized Difference Vegetation Index) derived from Sentinel-2 and Landsat 8 satellite imagery.
- Support conservation strategies by identifying patterns in mangrove coverage, especially the impact of climate factors.
- Technique Used: Google Earth Engine, QGIS

Achievements & Certification

Achievements: Outstanding Academic Performance Semester 2, year 2022-2023 and 2023-2024 — Sep 2024

Certificate: IELTS 6.5 — Mar 2023

Honors: Top 36 Excellent Community Projects — Nov 2022

Technical Skills

Languages: C/C++, Python, HTML, CSS, JavaScript, R

Tools:

- **Networking:** Cisco Packet Tracer, Wireshark
- **Development:** VSCode, Git, Postman, Selenium
- **Virtualization:** VirtualBox, Docker

Cloud: AWS (EC2), Google Cloud, Google Colab

Framework: Flask, PyTorch

Operating Systems: Linux, Windows

Databases: MySQL Server