Quan **Vo**

Undergraduate Student

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January 13, 2003 quan.va300475@example.com

Education

Bachelor of Mechanical Engineering — Hanoi, Vietnam

Hanoi University of Science and Technology - HUST — 2021 - 2025

- **GPA: 3.57/4.0**
- Specialized in **Precision Engineering** and **Optical Engineering**
- Relevant coursework: Advanced Mechanics, Optics, Robotics, Control Systems

Work Experience

Internship Student - Research Assistant — Nagoya, Japan

Laser Science Laboratory - Toyota Technological Institute — Oct. 2024 - Jan. 2025

- **Supervisor**: Professor **Takao Fuji**
- Collected experimental data using Two-Photon Microscopy System at National Institute for Physiological Sciences (NIPS)
- Studied advanced Fourier and Nonlinear Optics concepts
- Simulated **beam steering** with Spatial Light Modulator (SLM) using MATLAB

Mechanical Design Intern — Hanoi, Vietnam

VinMotion - A subsidiary of VinGroup — Aug. 2024 - Oct. 2024

- Increased humanoid robot knee joint range of motion (**ROM**) by 20% (125° to 150°), enhancing walking performance and flexibility
- Resolved 10+ assembly issues by auditing and standardizing screws and fasteners, improving manufacturing efficiency
- Developed 3+ footplate designs in SolidWorks, reducing operational noise and improving dynamic stability
- Created 2+ simulation-ready URDF files using SW2URDF plugin for Mujoco
- Submitted weekly technical reports to Hardware Manager, ensuring project progress and accountability

Undergraduate Research Coordinator/Research Assistant — Hanoi, Vietnam

Opto Mechatronic Laboratory - Hanoi University of Science and Technology — Jan. 2024 - Jul. 2024

- Led lab group as Head Student, coordinating schedules and ensuring timely report submissions
- Mentored new members in research procedures and methodologies
- Collaborated with supervisor (Dr. Nguyen Thị Kim Cúc) to align project goals and outcomes
- Provided technical assistance on computer vision, robotics, machine learning, and 3D printing
- Published research findings in a university conference

Projects

Chinese Robot Chess — Personal Project

Team Leader — Nov. 2025 - On-going

- Led a team of 5 in research on path planning and computer vision for a chess robot
- Designed a classic SCARA-type manipulator with integrated suction gripper
- Utilized ROS2 as middleware for robot control
- Applied YOLO8n model for Chinese character detection

Autofocus Laser System using CCD Camera — Lab.307, HUST

Imaging Processing Role — Apr. 2025 - Aug. 2025

- Designed and built experimental optical system to solve inverse problem of determining defocus distance from reflected laser beam spot size
- Implemented image processing algorithms (Center of Mass, Thresholding Center of Gravity, Gaussian fitting) to extract laser spot center and diameter
- Demonstrated feasibility of accurately determining sample defocus distance from measured laser spot diameter on sensor

SMA (Shape Memory Alloy) Artificial Muscle — Lab.307, HUST

Solo Project — Nov. 2023 - Jan. 2024

- Led investigation into soft actuation using Shape Memory Alloy artificial muscles
- Designed testing system with Microcontroller, Motor Driver, and Force Sensor
- Applied linear regression to predict SMA behavior, identifying research gaps through literature review
- Managed project timeline and deliverables with reports and Gantt charts

Synergy Robotic Hand — Lab.307, HUST

Mechanical Design and Electronics (Team of 2) — Mar. 2023 - Nov. 2023

- Innovated robotic hand control mechanism to reduce complexity, focusing on reducing motor requirements
- Designed locking mechanism for each finger using cam mechanism modeled in SolidWorks
- Reduced driving motors from 5 (one per joint/finger) to 2 motors through roller and locking mechanism implementation
- Implemented microcontroller-based voltage control for 2-motor robotic hand system
- **Achievement**: Won 2nd Prize at HUST Student Scientific Research Conference 2024

Honors

Competitions

2024 2nd Prize, HUST Student Scientific Research Conference

Scholarships

2025 Internship Program, Toyota Technological Institute

2024 Mirae Asset Foundation Scholarship

2023 Nitori International Scholarship Foundation

2021-2025 Academic Achievement Scholarship, School of Mechanical Engineering

Skills

Programming — **MATLAB**, **Python**

Software & Tools — **SolidWorks**, Mujoco, Blender, **ROS2**

Technical Skills — **Optical System Design**, Image Processing, Robotics, FEM Simulation, 3D Reverse Engineering, Computer Vision

Languages

Languages — **English (expected IETLS 7.0 in March 2026)**
Vietnamese (Native)