

Ly Phuc Thanh

Vingroup Scholar

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EDUCATION

University of Pennsylvania	Philadelphia, USA
School of Engineering and Applied Science (Penn Engineering)	2023 – 2025
Master of Science in Engineering in Robotics	
Ho Chi Minh City University of Technology (HCMUT)	Ho Chi Minh City, Vietnam
Vietnam National University, Ho Chi Minh City	2018 – 2022
Bachelor of Engineering in Mechatronics Engineering, <i>summa cum laude</i> , GPA: 8.87	

WORK EXPERIENCE

Procter & Gamble	Ho Chi Minh City, Vietnam
Project Manager – Power Control & Information Systems	January 2023 – Present
<ul style="list-style-type: none">Created digital twins and applied machine learning to optimize energy consumption, targeting savings of up to \$5 Million globally;Visualized energy consumption data to localize losses at equipment level and eliminate them through P&G internal controls and sustainability culture;Designed sensors plan, validated data and developed action plans for identified loss points;Designed and validated electrical and mechanical standards for 2 new products supply flow (process/machine sensors, Rockwell PLCs/HMI software, computer system validation, etc.);Assessed and standardized operation technology system (system architecture and cybersecurity.)	
Vingroup Big Data Institute – VinBigData	Hanoi, Vietnam
Technology Specialist	July 2022 – December 2022
<ul style="list-style-type: none">Researched monocular depth estimation for 3D reconstruction in robotic vision tasks;Expatriated on vision systems concerning construction sites safety and early warning protocols;Undertook an intensive and comprehensive AI training program, covering mathematics, machine learning, deep learning, computer vision, natural language processing, and AI ethics.	
Intel	Ho Chi Minh City, Vietnam
Undergraduate Technical Intern	February 2021 – August 2021
<ul style="list-style-type: none">Performed Intel's internal qualification tasks to ensure quality of output chipset products (data analysis, tools calibration, troubleshooting tool failures, etc.);Determined collision risk between chipset products and internal structure of the machines;Produced existing/experimental chipset products;Performed maintenance tasks and supervised external contractors in hazardous operations;Installed mechanical and electrical modules on 32 machines in production areas.	

RESEARCH EXPERIENCE

Control and Automation Laboratory,	Ho Chi Minh City, Vietnam
Ho Chi Minh City University of Technology	April 2021 – June 2022
Undergraduate Researcher, Department of Mechatronics	
<ul style="list-style-type: none">Programmed 3D reconstruction algorithms based on active structured light principles;Programmed calibration algorithms for robot–camera systems using dual quaternions, essentially giving sight to robots, allowing understanding of 3D space environment;Automated image acquisition, camera calibration, stereo calibration, phase-shift sequencing, and robot grasping modules to create a fully automatic process, ready for industrial deployment;Designed and optimized stereo vision systems robust to vibration, adaptive to field-of-view in different applications, and compatible with various robot end-tool mounting standards;	

- Designed conveyor belt mechanical, pneumatic mechanisms for sorting post-harvest vegetables;
- Implemented PointNet deep learning model to conduct part segmentation of individual objects in a bin, allowing robots to locate and grasp various shapes of industrial bin picking targets.

PUBLICATIONS & TECHNICAL REPORTS

1. P. Thanh Ly, Q. Chi Nguyen, N. Duy Hung Nguyen, P. -T. Pham and K. -S. Hong, "Structured-Light-Based 3D Scanning System for Industrial Manipulator in Bin Picking Application," *2022 Australian & New Zealand Control Conference (ANZCC)*, 2022, pp. 34-39, doi: 10.1109/ANZCC56036.2022.9966979.
2. N. Duy Hung Nguyen, P. -T. Pham, P. Thanh Ly, L. H. Nguyen Nguyen, and Q. Chi Nguyen, "Bin-Picking Solution for Industrial Robots Integrating a 2D Vision System," *2022 International Conference on High Performance Big Data and Intelligent Systems (HDIS)*, 2022, pp. 266-270, doi: 10.1109/HDIS56859.2022.9991341.
3. V. Long Dinh, T. An Ha, P. Thanh Ly, and H. Q. Thinh Ngo, "Design and control a portable ventilator," *8th Science and Technology Symposium for OISP Students*, 2020, pp. 19-24.

HONORS & AWARDS

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| 1. Vingroup Science and Technology Scholarship Program for Overseas Study for Master's and Doctoral Degrees (Vingroup) | 2023 |
| 2. Valedictorian Award – Gold Medal (HCMUT) | 2022 |
| 3. Excellent Graduation Thesis Award – First Prize (HCMUT) | 2022 |
| 4. SBA Scholarship (Saigon Hi-tech Park Business Association) | 2022 |
| 5. Panasonic Scholarship (Panasonic Vietnam) | 2022 |
| 6. Academic Incentive Scholarships (HCMUT) | 2018–2022 |
| 7. KSYS-CUBE Scholarship (HCMUT, Kanden Systems, and Cube System) | 2021 |

TEACHING EXPERIENCE

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| Control and Automation Laboratory | 2021–2022 |
| Teaching Assistant – Teaching Computer Vision and Mechanical Design to new members | |
| British Council | 2019–2020 |
| Teaching Assistant – Assisting English teachers and helping students with special needs | |

PROGRAMMING LANGUAGES & SKILLS

Python, MATLAB, Microcontrollers, C, C++, PLC
 Robot Kinematics, Dynamics, and Control; Mechatronics System Design
 Computer vision, Machine learning, Deep learning
 SOLIDWORKS, AutoCAD

CERTIFICATIONS

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| GRE | 2022 |
| Quantitative: 169 (93rd), Verbal: 159 (81st), Analytical: 5.0 (91st) | |
| IELTS | 2022 |
| Overall: 8.0 (L – 9.0, R – 8.5, W – 7.0, S – 7.0) | |

ACTIVITY

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| Dormitory arrangement for COVID-19 quarantine | 2020 |
| Volunteer at Dormitory of Vietnam National University, Ho Chi Minh City | |