Phạm Quang Hà

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EXPERIENCE

Software Engineer   Oct 2022 – present

VinAI

- Contribute to the development of Driver Monitoring System (DMS) on numerous electric vehicles.

Graduate Research Assistant   Oct 2020 – June 2022

VIAM Lab, University of Technology, VNUHCM

- Develop a direct SLAM based on camera-LiDAR fusion.
- Build a ROS2-based version of VIAM-USV-VC autopilot software suite.
- Build a ROS-based autopilot software suite, namely VIAM-USV-VC, for VIAM-USV2000 surface vessel.
- Simulate some autonomous capabilities for surface vessel on Gazebo.
- Build a customized version of QGroundControl ground control station, namely VIAM-USV-GC, for VIAM-USV2000 surface vessel.

Research Assistant   Jul 2018 – Oct 2020

VIAM Lab, University of Technology, VNUHCM

- Develop an online, graph-based LiDAR SLAM.
- Build a Qt-based GUI to remotely command and monitor Delivery AGV.
- Build a ROS-based autopilot software suite for Delivery AGV.

PROJECTS

Design and Control a Delivery AGV   Jul 2018 – Oct 2020

2019 Scientific Research for Student

- **Role**: I was responsible for building the autopilot software suite on embedded computer, implementing guidance and control laws, designing monitor GUI on laptop.
- **Description**: We aim to make local delivery faster and cheaper without human intervention by designing an automated guided vehicle. Our team managed to design the electrical components of Delivery AGV, build ordering mobile application for buyers and monitor GUI for shop-owners, as well as automate the vehicle's journey.
- **Result**: Our project earned an acceptance certificate at the end of the program.

EDUCATION

M.Eng.   University of Technology, VNUHCM   Mar 2021 – Nov 2022

- **Major**: Control Engineering & Automation (*Research Program*)
- **GPA**: 8.85/10.0
- **Thesis**: Simultaneous Localization and Mapping based on Camera-LiDAR Fusion in Riverine Environments (*defended with 9.3/10.0*)

B.Eng. University of Technology, VNUHCM	Sep 2016 – Nov 2020

- **Major**: Control Engineering & Automation (*Honors Program*)
- **GPA**: 8.42/10.0
- **Thesis**: Constructing Map and Collision-Free Path for Autonomous Vehicles (*defended with 9.58/10.0*)

SCIENTIFIC PUBLICATIONS

[1] **Q.-H. Pham**, N.-H. Tran, and T.-D. Nguyen, "IMU-Assisted Direct Visual-Laser Odometry in Challenging Outdoor Environments," in *International Conference on Green Technology and Sustainable Development*, Springer, 2023, pp. 497–508.

[2] **Q.-H. Pham**, N.-H. Tran, T.-T. Nguyen, and T.-P. Tran, "Online Robust Sliding-Windowed LiDAR SLAM in Natural Environments," in *2021 International Symposium on Electrical and Electronics Engineering (ISEE)*, IEEE, 2021, pp. 172–177.

[3] N.-H. Tran, **Q.-H. Pham**, J.-H. Lee, and H.-S. Choi, "VIAM-USV2000: An Unmanned Surface Vessel with Novel Autonomous Capabilities in Confined Riverine Environments," *Machines*, vol. 9, no. 7, p. 133, 2021.

[4] N.-H. Tran, M.-H. Vu, T.-C. Nguyen, M.-T. Phan, and **Q.-H. Pham**, "Implementation and Enhancement of Set-Based Guidance by Velocity Obstacle along with LiDAR for Unmanned Surface Vehicles," in *2020 5th International Conference on Green Technology and Sustainable Development (GTSD)*, IEEE, 2020, pp. 430–435.

SKILLS

Maths:	Linear Algebra, Probability, Differential Equation, Vector Calculus, Calculus of Variations, Fourier Analysis, Numerical Analysis, Complex Analysis, Differential Geometry.
Language:	C/ C++, MATLAB, Python.
Framework:	ROS, ROS2, Gazebo, MATLAB/Simulink, Qt.