Quang Pham

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Education

Bachelor of Science in Mechanical Engineering **Expected May 2026**

University of Florida, Gainesville, FL GPA: 3.98/4.0

- **Awards**: Snelling's Scholarship (2023), Horatio Alger Engineering Scholarship (2024), Dean's List of Herbert Wertheim College of Engineering (Fall 2022, Spring 2023, Fall 2023, Spring 2024).
- **Relevant Coursework**: Machine Learning (Coursera), Dynamics, Mechanics of Materials, Design and Manufacturing Lab, Numerical Methods, Mechanical Design 1, Control Systems, Heat Transfer, Fluid Mechanics, Control System Design Lab, Autonomous Vehicles.

Work Experience

Undergraduate Teaching Assistant Aug. 2024 – Present

Department of Mechanical and Aerospace Engineering, University of Florida Gainesville, FL

- Assist professors in organizing materials and managed office hours for **100+** upper-level students in the Mechanics of Materials and Control Systems classes.
- Maintain **99%** grading accuracy and ensured timely feedback for student success.

Undergraduate Research Assistant Aug. 2023 – Present

Active Perception and Robot Intelligence Lab, University of Florida Gainesville, FL

- Independently designed and conducted research for active autonomous underwater 3D object reconstruction with 3D Gaussian Splatting, utilizing HiperGator, an HPC cluster, to run GPU-accelerated computations.
- Implement Extended Kalman Filter for robot localization and construct an MCTS-Particle Filter-based routine for optimizing viewpoint selections.
- Write Python scripts to aid in image processing and organization, increasing productivity by **150%**.
- Create a CNN model using PyTorch, and leverage transfer learning to build a diver gesture detection model, achieving an average cross-validation accuracy of **96%**.
- Implement and test the Stanley Controller on an autonomous boat, increasing path-following accuracy by **50%**.
- Label **500+** images and video segments for object detection model training and testing.

Smart Autonomy Lab, University of Florida *Gainesville, FL*

- Develop an MDP/POMDP platform for experimenting with LTL-based control synthesis research using Python.
- Control a robot arm using ROS2 and enable its perception via object detection and object segmentation.

Involvements and Leadership

Chief Suspension Engineer | *UF Solar Gators* Sep. 2024 – Apr. 2025

- Led a team of **10** engineers through the redesign of **10+** suspension and steering components.
- Oversaw the manufacturing of **200+** suspension parts, developing Excel charts to keep track of progress.
- Managed a SolidWorks assembly of **50+** parts, resulting in seamless integration with other subsystems.
- Utilized Fusion 360 CAM code generation for CNC manufacturing of **5+** components.

External Vice President | *Vietnamese International Student Association* May 2024 – May 2025

- Planned and executed **10+** events, ensuring alignment with schedules and agendas.
- Cultivated partnerships with **10+** organizations to promote Vietnamese culture in Gainesville.
- Acquired a sponsorship amount of **$2000+** for VISA's Lunar New Year event.

Suspension Engineer | *UF Solar Gators* Sep. 2022 – May 2024

- Automated force calculations of suspension control arms using Excel VBA, reducing control arms weight by **40%**.
- Developed a Python script simulating suspension travel, making the geometry design process **50%** more efficient.
- Modeled the upright using SolidWorks and performed Finite Element Analysis on ANSYS, achieving a **45%** weight reduction while maintaining safety margins.
- Collaborated with 3 engineers to win 1st place in the Altair Design Challenge, earning a **$10,000** prize.

Technical Skills

Advanced: SolidWorks (certified), Python, MATLAB, Fusion 360
Proficient: ANSYS, 4-axis CNC, 3D printing, Arduino, Git, ROS 1/2, Linux OS, IsaacSim, Gazebo
Familiar: Simulink, GD&T, Excel VBA, LABVIEW, Welding, Docker, C++, LTSpice, KiCAD, Soldering