Le Quoc Viet Pham

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EDUCATION

University at Buffalo, The State University of New York — Buffalo, NY

Bachelor of Sciences in Computer Engineering, Minor in Robotics — *Expected: May 2027*

- **GPA**: **3.96/4.0** – Dean's List
- **Relevant Coursework**: Circuit Analysis, Digital Systems, Systems Programming, Data Structures, Object Oriented Programming (OOP), Calculus, Physics, Differential Equations, Statics

EXPERIENCE

Undergraduate Researcher — Feb 2024 – Present

Robot Form and Function Lab — *Buffalo, NY*

- Conducting research on small-scale autonomous robots inspired by insect biomechanics and embodied intelligence
- Focusing on robotic perception; implementing algorithms using C++ and Python to improve autonomy and environmental awareness
- Developing ICP and graph-based SLAM pipelines with VL53L5CX Time-of-Flight (ToF) sensors, aiming for a 20% reduction in localization error and improving 30% mapping accuracy in real-world settings
- Collaborating with 3 PhD and Master's candidates to refine robotic form factors, enhance sensor integration, and optimize system performance

LEADERSHIP ACTIVITIES

Resident Assistant — Aug 2024 – Present

UB Campus Living — *Buffalo, NY*

- Co-lead a team of 40 paraprofessionals to plan and execute large-scale community events, enforce campus policies, and ensure a safe and inclusive living environment
- Serve as a first-responder for on-call emergencies, conducting safety rounds, addressing incidents, and documenting reports to maintain community safety and compliance
- Foster an inclusive environment for 800+ residents by organizing social, educational, and cultural programs that promote engagement, personal growth, and cross-cultural awareness

PROJECTS

3D Human Posture Recognition for Robotic Control | *OpenCV, Mediapipe, Matplotlib, Numpy* — Present

- Built a real-time 3D posture detection system using MediaPipe and Intel RealSense Camera, achieving 90% accuracy with NumPy and Matplotlib for processing and visualization.
- Developed a gesture analysis pipeline to map over 15 distinct 3D postures to control commands for a humanoid robot, enabling intuitive, gesture-based interaction
- Integrated the system with the robot's control interface, achieving sub-100ms response time and increasing motion-command accuracy by 30% in test environments

AI Gym Tracker | *Python, Mediapipe, OpenCV, Git* — May 2025

- Developed an application leveraging machine learning to monitor and analyze workout performance in real-time
- Implemented computer vision algorithms to track exercise form, calculate reps, provide instant feedback, and reduce injury risk by 20%

TECHNICAL SKILLS

Languages: ROS2, Java, Python, C/C++, JavaScript, HTML/CSS, MATLAB
Frameworks/Tools: Git, Visual Studio Code, Arduino IDE, CMake, Docker, Linux, Gazebo, RViz, Fusion360
Libraries: pandas, Pillow, Matplotlib, OpenCV, Mediapipe, numpy, Tensorflow, PyTorch