Hai Nguyen

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Education

Northeastern University (NEU), USA — **Sep. 2019 - Present**
Ph.D. in Deep Reinforcement Learning in Robotics (3.93/4.0), — *Boston, MA, USA*
University of Southampton (UoS) — **2016-2017**
M.Sc. in Unmanned Aircraft Systems Design (Distinction) — *Southampton, UK*
Hanoi University of Science and Technology (HUST) — **2007-2012**
B.Sc. in Control and Automation Engineering (Talented Program) — *Hanoi, Vietnam*

Engineering Skills

Languages: Matlab, C/C++, Python, C#
Technologies/Frameworks: PyTorch, Numpy, OpenCV, ROS, MuJoCo, PyBullet, Gazebo, Arduino

Work Experience

LLPR Lab & Helping Hands Lab, Northeastern University — **Sep. 2019 - Present**
Reinforcement Learning (RL) in Robotics under Partial Observability Advisors: Prof. C. Amato, Prof. R. Platt

- Leveraged privileged information (states, beliefs) during training for efficient policy learning
- Developed a hierarchical RL agent: memory-based top policy and memory-less bottom policy
- Utilized drop-out networks to scale Bayesian-Adaptive RL for planning under partial observability

ARA Lab, University of Nevada, Reno — **Sep. 2018 - Jun. 2019**
Research Assistant in Robot Manipulation — *Advisor: Prof. H. M. La*

- Developed an RL mobile robot agent to open doors autonomously from RGB images
- Developed a YOLOv3-based object detector using thermal images for team CERBERUS to deploy on drones (later won the DARPA Subterranean Challenge in 2021)

Viettel Aerospace Institute, Vietnam — **2012-2016 & 2017-2018**
Flight Software Engineer

- Developed control & path planning algorithms for an FPGA-based autopilot for fixed-wing drones
- Implemented control software allowing a quad-plane to perform fixed↔rotary-wing on flight

Selected Publications (Full List)

"On-Robot Bayesian Reinforcement Learning for POMDPs", *IEEE/RSJ International Conference on Intelligent Robots and Systems (***IROS***), 2023*

"Leveraging Fully Observable Policies for Learning under Partial Observability", *The 6th Conference on Robot Learning (***CoRL***), 2022*

"Hierarchical Reinforcement Learning under Mixed Observability", *The 15th International Workshop on the Algorithmic Foundations of Robotics (***WAFR***), 2022*

"Belief-Grounded Networks for Accelerated Robot Learning under Partial Observability", *The 4th Conference on Robot Learning (***CoRL***), 2020*

Awards

Chevening Scholarship, British Foreign and Commonwealth Office (2% acceptance rate) — **2016**
IMechE UAS 2017 Challenge - Runner-up & Navigation Accuracy Award — **2017**
Graduate Dean's Merit Scholarship, University of Nevada, Reno ($10k) — **2018**
Travel & Accommodation Grant (WAFR) — **2022**