# Viet-Anh Le

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# Research Interest

• Distributed Model Predictive Control

• Machine Learning for Dynamics and Control

• Multi-agent Systems

• Robotics and Autonomous Systems

## **EDUCATION**

#### Northern Arizona University

Flagstaff, AZ, USA

M.Sc. in Informatics, GPA: 4.00/4.00 (as of Spring 2021)

Aug. 2019–May 2021

Advisor: Dr. Truong X. Nghiem, Assistant Professor, School of Informatics, Computing, and Cyber Systems

#### Hanoi University of Science and Technology

Hanoi, Vietnam

B.Sc. in Control Engineering and Automation (Talented Program<sup>1</sup>), GPA: 3.44/4.00 Aug. 2014–Jun. 2019

Advisor: Dr. Minh X. Phan, Professor, School of Electrical Engineering

## Professional Experience

#### Northern Arizona University

Flagstaff, AZ, USA

Graduate Research Assistant at School of Informatics, Computing, and Cyber Systems

Aug. 2019–Present

- Learning-based Model Predictive Control using Gaussian Processes
- Adaptive Sampling for Mobile Robotic Sensor Networks
- Flagstaff's F1/10 Robo-Racing Project

#### Vietnam Maritime University

Haiphong, Vietnam

Undergraduate Research Intern at School of Mechanical Engineering

Sep. 2017-Mar. 2019

- Applications of modern control theories in designing the crane's control systems
- Research, design and manufacture of the model of floating cranes for loading and unloading containers at Vietnam's seaports

## **PUBLICATIONS**

- [1] V.-A. Le and T. X. Nghiem, "Distributed Experiment Design and Control for Multi-agent Systems with Gaussian Processes", arXiv preprint arXiv:2103.14156, 2021.
- [2] V.-A. Le and T. X. Nghiem, "A Receding Horizon Approach for Simultaneous Active Learning and Control using Gaussian Processes", arXiv preprint arXiv:2101.10351, 2021.
- [3] V.-A. Le, L. Nguyen, and T. X. Nghiem, "ADMM-based Adaptive Sampling Strategy for Nonholonomic Mobile Robotic Sensor Networks", *IEEE Sensors Journal*, accepted.
- [4] V.-A. Le, L. Nguyen, and T. X. Nghiem, "An Efficient Adaptive Sampling Approach for Mobile Robotic Sensor Networks using Proximal ADMM", in 2021 American Control Conference (ACC), accepted.
- [5] V.-A. Le and T. X. Nghiem, "Gaussian Process Based Distributed Model Predictive Control for Multi-agent Systems using Sequential Convex Programming and ADMM", in 2020 IEEE Conference on Control Technology and Applications (CCTA), IEEE, 2020, pp. 31–36.
- [6] T. X. Nghiem, T.-D. Nguyen, and V.-A. Le, "Fast Gaussian Process based Model Predictive Control with Uncertainty Propagation", in 2019 57th Annual Allerton Conference on Communication, Control, and Computing (Allerton), IEEE, 2019, pp. 1052–1059.

 $<sup>^{1}</sup>$ The undergraduate program for approximately top 100 students in five majors

- [7] V.-A. Le, X. H. Le, L. Nguyen, and X. M. Phan, "An efficient adaptive hierarchical sliding mode control strategy using neural networks for 3D overhead cranes", *International Journal of Automation and Computing*, vol. 16, no. 5, pp. 614–627, 2019.
- [8] X. H. Le, V.-A. Le, and L. Nguyen, "Adaptive fuzzy observer based hierarchical sliding mode control for uncertain 2D overhead cranes", *Cyber-Physical Systems*, vol. 5, no. 3, pp. 191–208, 2019.
- [9] V. T. Nguyen, T. K. D. Ha, V.-A. Le, et al., "Modeling and integral hierarchical sliding-mode control for 2D ship-mounted crane", in 2019 First International Symposium on Instrumentation, Control, Artificial Intelligence, and Robotics (ICA-SYMP), IEEE, 2019, pp. 82–85.
- [10] V.-A. Le, X. H. Le, D. T. Vu, V. T. Pham, A. T. Le, and M. C. Hoang, "Designing an adaptive controller for 3D overhead cranes using hierarchical sliding mode and neural network", in 2018 International Conference on System Science and Engineering (ICSSE), IEEE, 2018, pp. 1–6.
- [11] A. T. Le, M. C. Hoang, V. T. Pham, C. N. Luong, D. T. Vu, and V.-A. Le, "Adaptive neural network sliding mode control of shipboard container cranes considering actuator backlash", *Mechanical Systems and Signal Processing*, vol. 112, pp. 233–250, 2018.

## SCHOLARSHIPS AND AWARDS

- Aug. 2020: Student Travel Award by IEEE Control Systems Society (CSS) to attend the 2020 IEEE Conference on Control Technology and Applications (CCTA)
- Aug. 2019: Nothern Arizona University's Presidential Fellowship Award
- Aug. 2018: Odon Vallet's Scholarship (established by Prof. Odon Vallet from Sorbonne University) for undergraduate students
- Jun. 2018: Conference Travel Award by Vietnam's National Foundation for Science and Technology Development (NAFOSTED) to attend the 2018 IEEE International Conference on System Science and Engineering (ICSSE)
- Apr. 2015: Gold Medal in the 2015 Vietnam's National Mathematical Olympiad for undergraduate students

### TECHNICAL SKILLS

- Programming languages: Python, Julia, MATLAB, C/C++, R.
- Software/Tools: Git, LaTex, Robot Operating System (ROS), Labview.

#### Academic Memberships

• Student Member, IEEE 2020-Present

• Student Member, IEEE Control System Society 2020–Present