

RESEARCH INTEREST

- Distributed Model Predictive Control
- Machine Learning for Dynamics and Control
- Multi-agent Systems
- Robotics and Autonomous Systems

EDUCATION

Northern Arizona University

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

Flagstaff, AZ, USA

Aug. 2019–May 2021 (Expected)

Hanoi University of Science and Technology

B.Sc. in Control Engineering and Automation (Talented Program¹), GPA: 3.44/4.00

Hanoi, Vietnam

Aug. 2014–Jun. 2019

PROFESSIONAL EXPERIENCE

Northern Arizona University

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

Flagstaff, AZ, USA

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

Undergraduate Research Intern at School of Mechanical Engineering

Haiphong, Vietnam

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

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: Northern 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)
- Dec. 2017: Certificate of training program in leadership, communication, creative and critical thinking, culture knowledge and teamwork skills at Vietnam's FPT Center for Young Talents (FYT)
- Apr. 2015: Gold Medal in the 2015 Vietnam's National Mathematical Olympiad for undergraduate students

¹The undergraduate program for approximately top 100 students in five majors

PUBLICATIONS

- [1] **V.-A. Le** and T. X. Nghiem, “Distributed Experiment Design and Control for Multi-agent Systems with Gaussian Processes”, *submitted to 2021 IEEE Conference on Decision and Control (CDC)*, submitted.
- [2] **V.-A. Le**, L. Nguyen, and T. X. Nghiem, “ADMM-based Adaptive Sampling Strategy for Nonholonomic Mobile Robotic Sensor Networks”, *arXiv preprint arXiv:2101.10500*, 2021.
- [3] **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.
- [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.
- [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.

TECHNICAL SKILLS

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

REFERENCES

- Dr. Truong Xuan Nghiem (Master Advisor)
Assistant Professor, School of Informatics, Computing, and Cyber Systems, Northern Arizona University, Flagstaff, AZ, USA
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- Dr. Xuan-Minh Phan (Undergraduate Advisor)
Professor, Department of Automatic Control, Hanoi University of Science and Technology, Hanoi, Vietnam
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- Dr. Anh-Tuan Le (Internship Advisor)
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