TRONG-DOAN NGUYEN

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SUMMARY

- Graduate researcher in apply machine learning, optimization and control (non)linear dynamical systems
- Ongoing research: design, implementation and performance analysis of controllers for smart building and autonomous driving systems
- Goal: to bridge the gap between theory and real world challenges

EDUCATION

NOTHERN ARIZONA UNIVERSITY *August 2019 - now*
Doctor of Philosophy in Informatics

- **Topic:** Apply Machine Learning, Control Theory, and Optimization to control Nonlinear Dynamical Systems
- Advisor: Prof. Truong X. Nghiem

NATIONAL CHIAO TUNG UNIVERSITY *September 2016 - August 2018*
Master of Science Overall GPA: 4.0/4.0

- Mechanical Engineering Department
- **Concentrations:** Control Theory, Machine Learning
- Advisor: Prof. An-Chen Lee
- Thesis: *Data-driven Model Approach Method in Control Selective Laser Melting process*

HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY *September 2011 - June 2016*
Mechatronics Engineering Overall GPA: 3.22/4.0

- **Concentrations:** Robot's Mechanics & Dynamics, Control Theory
- Advisor: Prof. Quang-Hoang Nguyen
- Thesis: *Evolution algorithms on tuning controllers parameters*

LUONG VAN TUY SPECILIZED HIGH SCHOOL *August 2009 - June 2011*
Physic-concenstration class

WORKING EXPERIENCE

VINSMART Hanoi, Vietnam
Embedded engineer *March 2019 - July 2019*

- Study Telecommunication System's architecture
- Participated in developing architecture for the layer 3 of Vinsmart's 5G NR base station

VINFAST Haiphong, Vietnam
Project Management Officier - PMO *December 2018 - March 2019*

- Interior junior-PMO: Cooperate with vendors and engineering team of Interior module to solve problems (engineering change, supply chain, development ...) occur during PTO phrase
- Keep track of project's progress and report to Vinfast's Chairwomen

VIETTEL AEROSPACE INSTITUTE Hanoi, Vietnam
Control systems engineer *November 2018 - December 2018*

Last update: Feb 2020

- Design new guidance law and control architecture for unmanned aerospace systems

HONORS

- **Fast Pitch Award** - AzSEC - 8^{th} Arizona Student Energy Conference 2019
- **Academic Achievement Award** of National Chiao Tung University 2017
- **Full Scholarship** of Ministry of Science and Technology Taiwan for Master students 2016
- **TOKAI GOKYO Scholarship** (TOKAI company) for excellent students of Hanoi University of Science and Technology 2014
- **Bronze medal,** National Mechanics Olympiad Contest, subject: Engineering mechanics 2013
- **Two second prizes,** Creative Contest for Youth and Students Ninh Binh 2011
- **Second prize,** Provincial Excellent Students Contest, Physics 2011
- **Silver medal,** Creative contest for youth and students Vietnam 2010
  One of Vietnam students participated in International Exhibition for Young Inventors, Nigeria
- **Third prize,** Creative Ideas and Solutions for Saving Energy and Protecting Environment, Ho Chi Minh Communist Youth Union 2010

RESEARCH INTEREST

- Cyber-Physical Systems
- Control and Optimization Theory
- Machine Learning
- Autonomous Technology

PUBLICATIONS

[1] T. X. Nghiem, T. Nguyen, and V. Le. "Fast Gaussian Process based Model Predictive Control with Uncertainty Propagation". In: *2019 57th Annual Allerton Conference on Communication, Control, and Computing (Allerton)*. Sept. 2019, pp. 1052–1059. DOI: 10.1109/ALLERTON.2019.8919857.

TEACHING & RESEARCHING EXPERIENCE

Research Assistant at the ICONS lab
SICCS *08.2019 - now*

- Control Autonomous Driving System
- Apply Machine Learning in control Smart Building System

Principal Investigator

- **Co-PI** 2 capstone projects
  - EE capstone: Connected Autonomous Vehicles
  - CS capstone: Autonomous F1/10 Racing for Everyone
- **PI** of a Student Research Grant (∼$2500): Data-Driven Analytics of Building Utility Demand

Teaching Assistant

- EE 499 - Introduction to Autonomous Driving *01.2020 - 05.2020*

Research Assistant at the Automatic Control Lab
Mechanical Engineering Department *08.2016 - 07.2018*

- Apply Machine Learning in control Selective Laser Melting

Research Assistant at the Laboratory of Applied Mechanics
Department of Applied Mechanics *08.2014 - 06.2016*

- Robot manipulators' dynamics and control

TRAINING & CERTIFICATES

- Machine Learning Standford ONLINE and Coursera (June 12, 2016) Certificate
- Control of Mobile Robots Georgia Institute of Technology and Coursera (July 27, 2016) Certificate
- CSE1309x: Python Programming The University of Texas System and edX (March 21, 2016) Certificate

LANGUAGE & TECHNICAL SKILLS

- **Languages:** Vietnamese (Native), English (Professional proficient)
- **Programming languages:** Python (proficient), C/C++ (proficient), ROS (proficient), Matlab (proficient)
- **Scientific software tools:** opencv, scikit-learn, numpy, matplotlib, Simulink, Anova, Eureqa, GPTIP
- **Techinical writing:** Microsoft Words, Excel, Power Point, LaTeX

REFERENCES

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