# Vuong V. Trinh

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## Experience

**Software Engineer**, **Benjamin Muyl Design Sarl** Sep–Dec 2018
- Develop scientific software for simulation, optimization and control of racing sail yachts;
- Deploy Python (*CasADi*), version management (*Git*), production tools (*Bash*) and unit-tests.

**Research Engineer**, **Commissariat à l'Énergie Atomique et aux Énergies Alternatives** 2014–2017
Supervisors: Mazen Alamir and Patrick Bonnay, on cryogenic process control and energetic optimization.
- Develop advanced control strategies including explicit constrained control and hierarchical distributed coordination, using machine learning, dynamic optimization and numerical algorithms;
- Model and simulation of cryogenic refrigeration using *Simcryogenics*; involve in experimental campaigns with station 400W 1.8K at CEA and 18kW 4.5K LHC at CERN;
- Intensive use of Matlab and C (*CPLEX, ACADOtoolkit*); familiar with PLC (*Siemens, Schneider*), DCS, SCADA and Modbus, instrumentations (coldbox, valve, compressor).

**Research Intern**, **Grenoble Images Parole Signal Automatique Laboratoire** Jan–May 2014
Supervisors: Ioan D. Landau and Luc Dugard, on robust active vibration analysis and control.
- Perform system identification, robust control design and experiments using Matlab and xPC Target;
- Laboratory instructor and teaching assistant for the adaptive control course at EECI IGSC'14.

**Industrial Intern**, **Yazaki Corporation** Apr–Aug 2011
- Analyse customer specifications, present technical solutions, train operators, deliver BOMs;
- Setup control box, relays and inverters; program PLC and HMI; deploy AutoCAD, Step7 and WinCC.

## Education

**M.S. Automation & Control Engineering**, Université Joseph Fourier & Grenoble INP 2013–2014
Mention: *good* (*MiSCIT Program*) | GPA: 15/20 | Rank: 3/18

**B.S. Automation & Control Engineering**, Hanoi University of Science and Technology 2007–2012
Mention: *good* (*Talented Engineer's Program*) | GPA: 3.17/4.00

## Awards

**Excellence Master Fellowship**, LabEx PERSYVAL-Lab 2013

**Vallet Scholarship for excellent academic performance**, Rencontres du Vietnam 2008

**Double Prize in Physics (1st) and Maths (cons)**, Vietnam Mathematics & Youth Magazine 2007

## Services

**Adjunct Researcher**, **Dong A University Research Institute** since Mar 2019
- Work with Kim-Phuc Tran on real-time anomaly detection algorithms for industrial Big Data;
- Familiar with Python (*Flask, Pandas, TensorFlow*), JS (*Highcharts*), Heroku (*Postgres*), AWS (*RDS*).

**Organization Team**, **Junior Scientist and Industries Annual Meeting** Mar 2016

## Languages

Vietnamese (*native*) | English (*fluent*: IELTS 6.5) | French (*basic*)

## Valorisation

**CS50's Introduction to Computer Science**, Harvard University | edX

**Six Sigma and Lean Processional Program**, Technische Universität München | edX

**TUM Lean Six Sigma Yellow Belt**, Technische Universität München | TUM School of Management

**Semaine d'Étude Maths-Info Entreprises**, Agence Maths Entreprises | ANSYS OPTIS

## PUBLICATIONS

**V. V. Trinh, M. Alamir, P. Bonnay and F. Bonne**, **Explicit model predictive control via nonlinear piecewise approximations**, in *Proceedings of the 10th IFAC Symposium in Nonlinear Control Systems*, Monterey, CA, USA, 2016.

**M. Alamir, V. V. Trinh and P. Bonnay**, **On the stabilization of fixed-point iterations arising in hierarchical control design**, in *Proceedings of the 20th IFAC World Congress*, Toulouse, France, 2017.

**M. Alamir, P. Bonnay, F. Bonne and V. V. Trinh**, **Fixed-point based hierarchical MPC control design for a cryogenic refrigerator**, *Journal of Process Control*, vol. 58, no. Supplement C, pp. 117-130, 2017.

**V. V. Trinh, K. P. Tran and A. T. Mai**, **Anomaly detection in wireless sensor networks via support vector data description with Mahalanobis kernels and discriminative adjustment**, in *Proceedings of the 2017 4th NAFOSTED Conference on Information and Computer Science*, Hanoi, Vietnam, 2017.

**V. V. Trinh, K. P. Tran and T. H. Truong**, **Data driven hyperparameter optimization of one-class support vector machines for anomaly detection in wireless sensor networks**, in *Proceedings of the 2017 International Conference on Advanced Technologies for Communications*, Quy Nhon, Vietnam, 2017.

## REFERENCES

**Kim-Phuc Tran**
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École nationale supérieure des arts et industries textiles
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## MISC

**Personal Info:** Sex: Male | Marital status: Single | DOB: 20/12/1989 | POB: Thanh Hoa (Vietnam)
**Interests** Hiking | Ping-pong | Travel