

# Vuong V. Trinh

🌐 <https://vuongvtrinh.github.io> ✉ [vanvuong.trinh@gmail.com](mailto:vanvuong.trinh@gmail.com) ☎ +84(0)932375111 🌐 trinhvv

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## EXPERIENCE

- Adjunct Researcher, Dong A University Research Institute** Mar–Sep 2019
- Work with Kim-Phuc Tran, Anh-Tuan Mai and Thu-Huong Truong on real-time anomaly detection algorithms for industrial Big Data, particularly for wireless sensor networks;
  - Familiar with Python (*Flask*, *Pandas*, *Scikit-Learn*), JS (*Highcharts*), Heroku (*Postgres*), AWS (*RDS*, *EC2*); editing tools (*TeX*, *Inkscape*); embedded systems (*Rasp Pi*, *STM32*).
- R&D Engineer, Benjamin Muyl Design Sarl** Sep–Dec 2018
- Work with Benjamin Muyl and Antoine Guillou on simulation and optimization of sail yachts;
  - Contribute to *META* project by upgrading from Java and Matlab to Python using symbolic framework;
  - Deploy Python (*CasADi*), version management (*Git*), production tools (*Bash*) and unit-tests.
- R&D 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, within project ANR CRYOGREEN.
- Develop advanced model predictive control strategies including explicit constrained control and hierarchical distributed coordination, via machine learning, applied optimization and numerical algorithms;
  - Dynamic model and simulation of compression stations and cryogenic refrigerators using *Simcryogenics*; involve in experiments with station 400W 1.8K at SBT and 18kW 4.5K LHC facilities at CERN;
  - Intensive use of Matlab and C (*CPLEX*, *ACADOtoolkit*); familiar with PLC (*Siemens*, *Schneider*), SCADA and Modbus; technology know-how (cold-box, valve, compressor, sensors).
- Research Intern, Grenoble Images Parole Signal Automatique Laboratoire** Jan–May 2014  
Supervisors: Ioan Doré 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 within European Embedded Control Institute IGSC.
- Industrial Intern, Yazaki Corporation** Apr–Aug 2011
- Analyse technical specifications and devise suitable solution for automotive wire production conveyors;
  - 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

## LANGUAGES

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

## VALORISATION

- CS50's Introduction to Computer Science**, edX | Harvard University
- Six Sigma and Lean Processional Program**, edX | Technische Universität München
- TUM Lean Six Sigma Yellow Belt**, Technische Universität München | TUM School of Management
- Semaine d'Étude Maths-Info Entreprises**, Agence Maths Entreprises

PUBLICATIONS

V. V. Trinh, M. Alamir, P. Bonnay and F. Bonne, **Explicit model predictive control via nonlinear piece-wise 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.

SERVICES

**Organization Team of JSIam**, Grenoble Innovation for Advanced New Technologies

Mar 2016

REFERENCES

**Kim-Phuc Tran**  
Email: [kim-phuc.tran@ensait.fr](mailto:kim-phuc.tran@ensait.fr)  
Phone: +33 (0)3 20 25 89 60

*Associate Professor in Automation and Industrial Informatics*  
École Nationale Supérieure des Arts et Industries Textiles  
2 allée Louise et Victor Champier, 59056 Roubaix, France

**Ioan-Doré Landau**  
Email: [ioan-dore.landau@gipsa-lab.fr](mailto:ioan-dore.landau@gipsa-lab.fr)  
Phone: +33 (0)4 76 82 63 91

*Emeritus Research Director at National Centre for Scientific Research*  
Grenoble Images Parole Signal Automatique Laboratoire  
11 rue des Mathématiques, 38400 Saint-Martin-d’Hères, France

MISC

**Personal Info:** Gender: Male | Marital status: Single | DOB: 20 Dec 1989 | POB: Thanh Hoa (Vietnam)

**Professions:** Industrial Automation | Process Control & Optimization | Data Analytics

**Interests:** Hiking | Ping-pong | Reading