

Vuong V. Trinh

Process Control and Optimization

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

EXPERIENCE

Associate Researcher in Artificial Intelligence since 2019
Dong A University Research Institute Da Nang, Vietnam

- 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*); technical documentation (*TeX*, *Inkscape*, *GIMP*); embedded systems (*Rasp Pi*, *STM32*).

R&D Engineer in Naval Simulation and Optimization 2018
Benjamin Muyl Design Sarl Auray, France

- 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 in Process Control and Optimization 2014–2017
Commissariat à l'Énergie Atomique et aux Énergies Alternatives Grenoble, France
Supervisors: Mazen Alamir and Patrick Bonnay on cryogenic process control and energetic optimization, within project ANR CRYOGREEN.

- Develop advanced model predictive control strategies, e.g. explicit constrained control and hierarchical distributed coordination, via machine learning, mathematical optimization and numerical algorithms;
- Model, simulation and control of compression stations and cryogenic refrigerators using *Simcryogenics* and *EcosimPro*; involve in experiments with SBT's station 400W 1.8K, CERN's 18kW 4.5K LHC facilities and Schneider Electric's solar thermodynamic power plant;
- Intensive use of Matlab and C (*CPLEX*, *ACADOtoolkit*); familiar with PLCs (*Siemens S7-300/400*, *Schneider M340/450*), DCS and SCADA; instruments (coldbox, compressor, valve, sensor, pump).

Research Intern in Active Vibration Control 2014
Grenoble Images Parole Signal Automatique Laboratoire Grenoble, France
Supervisors: Ioan Doré Landau and Luc Dugard, on active vibration control for automotive applications.

- 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 in Production and Automation 2011
Yazaki Corporation Hai Phong, Vietnam

- 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*)

PUBLICATIONS	V. V. Trinh, M. Alamir, P. Bonnay and F. Bonne, Explicit model predictive control via nonlinear piece-wise approximations , in <i>Proceedings of the 10th IFAC Symposium in Nonlinear Control Systems</i> , 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 <i>Proceedings of the 20th IFAC World Congress</i> , Toulouse, France, 2017.		
	M. Alamir, P. Bonnay, F. Bonne and V. V. Trinh, Fixed-point based hierarchical MPC control design for a cryogenic refrigerator , <i>Journal of Process Control</i> , vol. 58, 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 <i>Proceedings of the 2017 4th NAFOSTED Conference on Information and Computer Science</i> , 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 <i>Proceedings of the 2017 International Conference on Advanced Technologies for Communications</i> , Quy Nhon, Vietnam, 2017.		
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		
SERVICES	Organization Team of JSIam, Grenoble Innovation for Advanced New Technologies		Mar 2016
REFERENCES	Kim-Phuc Tran Associate Professor in Automation and Industrial Informatics Email: kim-phuc.tran@ensait.fr École Nationale Supérieure des Arts et Industries Textiles Phone: +33 (0)3 20 25 89 60 2 allée Louise et Victor Champier, 59056 Roubaix, France		
	Ioan-Doré Landau Emeritus Research Director at National Centre for Scientific Research Email: ioan-dore.landau@gipsa-lab.fr Grenoble Images Parole Signal Automatique Laboratoire Phone: +33 (0)4 76 82 63 91 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) Interests: Hiking Ping-pong Reading		