

Vuong V. Trinh

Distributed Control System & Advanced Process Control Engineer

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EXPERIENCE	DCS / APC Engineer, Nghi Son Refinery and Petrochemical LLC since 2020
	Artificial Intelligence Researcher, Dong A University Research Institute 2019 <ul style="list-style-type: none">• Work with Kim-Phuc Tran (ENSAIT/GEMTEX) on real-time anomaly detection algorithms for industrial Big Data, e.g. wireless sensor networks;• Intensive use of Python (<i>Pandas</i>, <i>Scikit-Learn</i>, <i>Streamlit</i>, <i>Selenium</i>, <i>PyAutoGUI</i>, <i>Flask</i>); familiar with JAMstack (<i>Hugo</i>, <i>Wowchemy</i>, <i>Netlify</i>), JS (<i>Highcharts</i>) and cloud (<i>Heroku</i>, <i>Azure</i>, <i>AWS</i>, <i>GCP</i>).
	Control System Engineer, Benjamin Muyl Design Sarl 2018 <ul style="list-style-type: none">• Work with Benjamin Muyl (INEOS TEAM UK) on optimal control of sail yachts with direct collocation;• Contribute to the software <i>META</i> by upgrading from Java / Matlab to Python using symbolic framework;• Deploy Python (<i>CasADi</i>), version management (<i>Git</i>), production tools (<i>Bash</i>) and unit-tests.
	Process Control Engineer, French Alternative Energies and Atomic Energy Commission 2014–2017 Supervisors: Mazen Alamir (CNRS/GIPSA-lab) and Patrick Bonnay (CEA/SBT) on advanced cryogenic process control and energetic optimization, within project ANR CRYOGREEN. <ul style="list-style-type: none">• Develop advanced model predictive control strategies, e.g. explicit constrained control and hierarchical distributed coordination, via machine learning, mathematical optimization and numerical algorithms;• Model and control of compression stations and cryogenic refrigerators using <i>Simcryogenics</i>; experiments with SBT's station 400W 1.8K and CERN's 18kW 4.5K LHC facilities;• Real-time nonlinear constrained control for Stirling engine in solar thermodynamic power plant;• Intensive use of Matlab and C (<i>CPLEX</i>, <i>ACADO</i>); familiar with PLC/DCS/SCADA and technical editing (<i>TeX</i>, <i>Inkscape</i>).
	Research Intern, French National Centre for Scientific Research 2014 Supervisors: Ioan Doré Landau and Luc Dugard (CNRS/GIPSA-lab), on active vibration control. <ul style="list-style-type: none">• Perform system identification, robust control design and experiments using Matlab and xPC Target;• Laboratory instructor for adaptive control course within European Embedded Control Institute.
	Industrial Intern, Yazaki Corporation 2011 <ul style="list-style-type: none">• 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: <i>good (MiSCIT Program)</i> GPA: 15/20 Rank: 3/18
	B.S. Automation & Control Engineering , Hanoi University of Science and Technology 2007–2012 Mention: <i>good (Talented Engineer's Program)</i> GPA: 3.17/4.00
AWARDS	Excellence Master Fellowship , LabEx PERSYVAL-Lab 2013
	Vallet Scholarship , Rencontres du Vietnam 2008
	Double Prize in Physics (1st) and Maths (cons) , Vietnam Mathematics & Youth Magazine 2007
LANGUAGES	Vietnamese (<i>native</i>) English (<i>fluent: IELTS 6.5</i>) French (<i>basic</i>)

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, 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.

VALORISATION **Google Project Management Professional Certificate**, Coursera | Google

Deep Learning Specialization, Coursera | DeepLearning.AI

Autodesk CAD/CAM for Manufacturing Specialization, Coursera | Autodesk

Investment Management Specialization, Coursera | University of Geneva

Blockchain Revolution Specialization, Coursera | INSEAD

TUM Lean Six Sigma Yellow Belt, Technische Universität München

IBM Cybersecurity Analyst Professional Certificate, Coursera | IBM

IBM Data Science Professional Certificate, Coursera | IBM

IBM Full Stack Cloud Developer Professional Certificate, Coursera | IBM

Creating and Developing a Tech Startup, Coursera | École Polytechnique | HEC Paris

Creative Thinking: Techniques and Tools for Success, Coursera | Imperial College London

Financial Markets, Coursera | Yale University

Investment Management in an Evolving and Volatile World, Coursera | HEC Paris | AXA IM

Blockchain: Foundations and Use Cases, Coursera | Consensus

Networking and Security Architecture with VMware NSX, Coursera | VMWare

Advanced Process Control: Profit Controller & Profit Optimizer Implementation, Honeywell

Safety Manager: Implementation, Honeywell

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

Initiation à la programmation (en C++), Coursera | EPFL

Semaine d'Étude Maths-Info Entreprises, Agence Maths Entreprises

REFERENCES **Kim-Phuc Tran** *Associate Professor in Automation and Industrial Informatics*
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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