

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>Selenium</i>, <i>PyAutoGUI</i>, <i>Flask</i>, <i>Streamlit</i>); familiar with JAMstack (<i>Hugo</i>, <i>Wowchemy</i>, <i>Netlify</i>) and JS (<i>Highcharts</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
EDUCATION	Supervisors: Mazen Alamir (CNRS/GIPSA-lab) and Patrick Bonnay (CEA/STB) 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 STB'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
AWARDS	<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.	
	M.S. Automation & Control Engineering , Université Joseph Fourier & Grenoble INP	2013–2014
	Mention: <i>good (MiSCIT Program)</i> GPA: 15/20 Rank: 3/18	
LANGUAGES	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 <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. (Best Paper Award Finalist)		
SERVICES	Arctic Code Vault Contributor , GitHub Archive Program		since 2020
	Organization Team , Junior Scientist and Industry Annual Meeting (GIANT-Grenoble)		2016
VALORISATION	Machine Learning in Python with Scikit-Learn , Inria		
	Advanced Process Control: Profit Controller & Profit Optimizer Implementation , Honeywell		
	Safety Manager: Implementation , Honeywell		
	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		
REFERENCES	Semaine d'Étude Maths-Info Entreprises , Agence Maths Entreprises		
	Kim-Phuc Tran	<i>Associate Professor in Automation and Industrial Informatics</i>	
	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	<i>Emeritus Research Director at National Centre for Scientific Research</i>	
	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	