

Vuong V. Trinh

Process Control and Optimization

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EXPERIENCE	Associate Researcher in Artificial Intelligence	since 2019
	Dong A University Research Institute	Da Nang, Vietnam
	<ul style="list-style-type: none">• 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 (<i>Flask</i>, <i>Pandas</i>, <i>Scikit-Learn</i>), JS (<i>Highcharts</i>), Heroku (<i>Postgres</i>), AWS (<i>RDS</i>, <i>EC2</i>); editing tools (<i>TeX</i>, <i>Inkscape</i>); embedded systems (<i>Rasp Pi</i>, <i>STM32</i>).	
	R&D Engineer in Naval Simulation and Optimization	2018
	Benjamin Muyl Design Sarl	Auray, France
	<ul style="list-style-type: none">• Work with Benjamin Muyl and Antoine Guillou on simulation and optimization of sail yachts;• Contribute to <i>META</i> project by upgrading from Java and Matlab to Python using symbolic framework;• Deploy Python (<i>CasADi</i>), version management (<i>Git</i>), production tools (<i>Bash</i>) 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.	
	<ul style="list-style-type: none">• Develop advanced model predictive control strategies including explicit constrained control and hierarchical distributed coordination, via machine learning, applied optimization and numerical algorithms;• Model and simulation of compression stations and cryogenic refrigerators using <i>Simcryogenics</i>, <i>Ecosim-Pro</i>; involve in experiments with SBT's station 400W 1.8K and CERN's 18kW 4.5K LHC facilities;• Intensive use of Matlab and C (<i>CPLEX</i>, <i>ACADOtoolkit</i>, <i>CVX</i>); familiar with PLCs (<i>Siemens S7-300/400</i>, <i>Schneider M340/450</i>) with Modbus; DCS and SCADA for cryoplants (coldbox, compressor, sensor).	
	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.	
	<ul style="list-style-type: none">• 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
	<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 for excellent academic performance , 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	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>																				
VALORISATION	<p>CS50’s Introduction to Computer Science, edX Harvard University</p> <p>Six Sigma and Lean Processional Program, edX Technische Universität München</p> <p>TUM Lean Six Sigma Yellow Belt, Technische Universität München TUM School of Management</p> <p>Semaine d’Étude Maths-Info Entreprises, Agence Maths Entreprises</p>																				
SERVICES	Organization Team of JSIam , Grenoble Innovation for Advanced New Technologies		Mar 2016																		
REFERENCES	<table><tr><td>Kim-Phuc Tran</td><td colspan="2"><i>Associate Professor in Automation and Industrial Informatics</i></td></tr><tr><td>Email: kim-phuc.tran@ensait.fr</td><td colspan="2">École Nationale Supérieure des Arts et Industries Textiles</td></tr><tr><td>Phone: +33 (0)3 20 25 89 60</td><td colspan="2">2 allée Louise et Victor Champier, 59056 Roubaix, France</td></tr><tr><td>Ioan-Doré Landau</td><td colspan="2"><i>Emeritus Research Director at National Centre for Scientific Research</i></td></tr><tr><td>Email: ioan-dore.landau@gipsa-lab.fr</td><td colspan="2">Grenoble Images Parole Signal Automatique Laboratoire</td></tr><tr><td>Phone: +33 (0)4 76 82 63 91</td><td colspan="2">11 rue des Mathématiques, 38400 Saint-Martin-d’Hères, France</td></tr></table>			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	
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MISC	<p>Personal Info: Gender: Male Marital status: Single DOB: 20 Dec 1989 POB: Thanh Hoa (Vietnam)</p> <p>Interests: Hiking Ping-pong Reading</p>																				