

Vuong V. Trinh

Distributed Control System & Advanced Process Control Engineer

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EXPERIENCE	<p>Process Control Engineer, Nghi Son Refinery and Petrochemical LLC since 2020</p> <ul style="list-style-type: none">• Provide support services to other departments in accordance with established working procedures;• Assuring effective utilization of technical quality and ensuring appropriate safety standards. <p>Associate Researcher, Dong A University Research Institute 2019</p> <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;• Familiar with Python (<i>Flask, Pandas, Selenium, PyAutoGUI, PyWinAuto</i>), JS (<i>Highcharts</i>); Heroku (<i>Postgres</i>), AWS (<i>RDS, EC2</i>), Web (<i>Hugo, Netlify</i>); Editing (<i>Office, TeX, Inkscape</i>). <p>Software Engineer, Benjamin Muyl Design Sarl 2018</p> <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. <p>Process Control Engineer, French Alternative Energies and Atomic Energy Commission 2014–2017</p> <p>Supervisors: Mazen Alamir (CNRS/GIPSA-lab) and Patrick Bonnay (CEA-INAC/SBT) on advanced cryogenic process control and energetic optimization, within project ANR CRYOGREEN.</p> <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, ACADO</i>); familiar with PLC/DCS/SCADA. <p>Research Intern, French National Centre for Scientific Research 2014</p> <p>Supervisors: Ioan Doré Landau and Luc Dugard (CNRS/GIPSA-lab), on active vibration control.</p> <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. <p>Industrial Intern, Yazaki Corporation 2011</p> <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	<p>M.S. Automation & Control Engineering, Université Joseph Fourier & Grenoble INP 2013–2014</p> <p>Mention: <i>good (MiSCIT Program)</i> GPA: 15/20 Rank: 3/18</p> <p>B.S. Automation & Control Engineering, Hanoi University of Science and Technology 2007–2012</p> <p>Mention: <i>good (Talented Engineer's Program)</i> GPA: 3.17/4.00</p>
AWARDS	<p>Excellence Master Fellowship, LabEx PERSYVAL-Lab 2013</p> <p>Vallet Scholarship, Rencontres du Vietnam 2008</p> <p>Double Prize in Physics (1st) and Maths (cons), Vietnam Mathematics & Youth Magazine 2007</p>
LANGUAGES	Vietnamese (<i>native</i>) English (<i>fluent: IELTS 6.5</i>) French (<i>basic</i>)

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 <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)	
SOFTWARE	flask-highcharts , GitHub Archive Program A tutorial to develop a web dashboard for data analytics using Python Flask and JavaScript Highcharts	
SERVICES	Organization Team , Junior Scientist and Industry Annual Meeting	2016
REFERENCES	Kim-Phuc Tran <i>Associate Professor in Automation and Industrial Informatics</i> Email: kim-phuc.tran@ensait.fr <i>École Nationale Supérieure des Arts et Industries Textiles</i> Phone: +33 (0)3 20 25 89 60 <i>2 allée Louise et Victor Champier, 59056 Roubaix, France</i> Ioan-Doré Landau <i>Emeritus Research Director at National Centre for Scientific Research</i> Email: ioan-dore.landau@gipsa-lab.fr <i>Grenoble Images Parole Signal Automatique Laboratoire</i> Phone: +33 (0)4 76 82 63 91 <i>11 rue des Mathématiques, 38400 Saint-Martin-d'Hères, France</i>	