

# Vuong V. Trinh

Distributed Control System & Advanced Process Control Engineer

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

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EXPERIENCE	<p><b>Process Control Engineer, Nghi Son Refinery and Petrochemical LLC</b> since 2020</p> <ul style="list-style-type: none"><li>• Provide support services to other departments in accordance with established working procedures;</li><li>• Assuring effective utilization of technical quality and ensuring appropriate safety standards.</li></ul> <p><b>Associate Researcher, Dong A University Research Institute</b> 2019</p> <ul style="list-style-type: none"><li>• Work with Kim-Phuc Tran (ENSAIT/GEMTEX) on real-time anomaly detection algorithms for industrial Big Data, e.g. wireless sensor networks;</li><li>• 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>TeX, Inkscape</i>).</li></ul> <p><b>Software Engineer, Benjamin Muyl Design Sarl</b> 2018</p> <ul style="list-style-type: none"><li>• Work with Benjamin Muyl (INEOS TEAM UK) on optimal control of sail yachts with direct collocation;</li><li>• Contribute to the software <i>META</i> by upgrading from Java / Matlab to Python using symbolic framework;</li><li>• Deploy Python (<i>CasADi</i>), version management (<i>Git</i>), production tools (<i>Bash</i>) and unit-tests.</li></ul> <p><b>Process Control Engineer, French Alternative Energies and Atomic Energy Commission</b> 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"><li>• Develop advanced model predictive control strategies, e.g. explicit constrained control and hierarchical distributed coordination, via machine learning, mathematical optimization and numerical algorithms;</li><li>• 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;</li><li>• Real-time nonlinear constrained control for Stirling engine in solar thermodynamic power plant;</li><li>• Intensive use of Matlab and C (<i>CPLEX, ACADO</i>); familiar with PLC/DCS/SCADA.</li></ul> <p><b>Research Intern, French National Centre for Scientific Research</b> 2014</p> <p>Supervisors: Ioan Doré Landau and Luc Dugard (CNRS/GIPSA-lab), on active vibration control.</p> <ul style="list-style-type: none"><li>• Perform system identification, robust control design and experiments using Matlab and xPC Target;</li><li>• Laboratory instructor for adaptive control course within European Embedded Control Institute.</li></ul> <p><b>Industrial Intern, Yazaki Corporation</b> 2011</p> <ul style="list-style-type: none"><li>• Analyse technical specifications and devise suitable solution for automotive wire production conveyors;</li><li>• Setup control box, relays and inverters; program PLC and HMI; deploy AutoCAD, Step7 and WinCC.</li></ul>
EDUCATION	<p><b>M.S. Automation &amp; Control Engineering</b>, Université Joseph Fourier &amp; Grenoble INP 2013–2014 Mention: <i>good (MiSCIT Program)</i>   GPA: 15/20   Rank: 3/18</p> <p><b>B.S. Automation &amp; Control Engineering</b>, Hanoi University of Science and Technology 2007–2012 Mention: <i>good (Talented Engineer's Program)</i>   GPA: 3.17/4.00</p>
AWARDS	<p><b>Excellence Master Fellowship</b>, LabEx PERSYVAL-Lab 2013</p> <p><b>Vallet Scholarship</b>, Rencontres du Vietnam 2008</p> <p><b>Double Prize in Physics (1st) and Maths (cons)</b>, Vietnam Mathematics &amp; Youth Magazine 2007</p>
LANGUAGES	Vietnamese ( <i>native</i> )   English ( <i>fluent: IELTS 6.5</i> )   French ( <i>basic</i> )

VALORISATION	<b>CS50's Introduction to Computer Science</b> , edX   Harvard University <b>Six Sigma and Lean Processional Program</b> , edX   Technische Universität München <b>TUM Lean Six Sigma Yellow Belt</b> , Technische Universität München   TUM School of Management <b>Semaine d'Étude Maths-Info Entreprises</b> , Agence Maths Entreprises		
PUBLICATIONS	<b>V. V. Trinh, M. Alamir, P. Bonnay and F. Bonne, Explicit model predictive control via nonlinear piece-wise approximations</b> , in <i>Proceedings of the 10th IFAC Symposium in Nonlinear Control Systems</i> , Monterey, CA, USA, 2016. <b>M. Alamir, V. V. Trinh and P. Bonnay, On the stabilization of fixed-point iterations arising in hierarchical control design</b> , in <i>Proceedings of the 20th IFAC World Congress</i> , Toulouse, France, 2017. <b>M. Alamir, P. Bonnay, F. Bonne and V. V. Trinh, Fixed-point based hierarchical MPC control design for a cryogenic refrigerator</b> , <i>Journal of Process Control</i> , vol. 58, pp. 117-130, 2017. <b>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</b> , in <i>Proceedings of the 2017 4th NAFOSTED Conference on Information and Computer Science</i> , Hanoi, Vietnam, 2017. <b>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</b> , in <i>Proceedings of the 2017 International Conference on Advanced Technologies for Communications</i> , Quy Nhon, Vietnam, 2017. (Best Paper Award Finalist)		
SERVICES	<b>Arctic Code Vault Contributor</b> , GitHub Archive Program <b>Organization Team</b> , Junior Scientist and Industry Annual Meeting (GIANT-Grenoble)	since 2020 2016	
REFERENCES	<b>Kim-Phuc Tran</b> Email: kim-phuc.tran@ensait.fr Phone: +33 (0)3 20 25 89 60 <b>Ioan-Doré Landau</b> Email: ioan-dore.landau@gipsa-lab.fr Phone: +33 (0)4 76 82 63 91	Associate Professor in Automation and Industrial Informatics École Nationale Supérieure des Arts et Industries Textiles 2 allée Louise et Victor Champier, 59056 Roubaix, France Emeritus Research Director at National Centre for Scientific Research Grenoble Images Parole Signal Automatique Laboratoire 11 rue des Mathématiques, 38400 Saint-Martin-d'Hères, France	