

# Vuong V. Trinh

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EXPERIENCE	<p><b>Associate Researcher, Dong A University Research Institute</b> Mar–Sep 2019</p> <ul style="list-style-type: none"><li>• 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;</li><li>• 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>).</li></ul> <p><b>R&amp;D Engineer, Benjamin Muyl Design Sarl</b> Sep–Dec 2018</p> <ul style="list-style-type: none"><li>• Work with Benjamin Muyl and Antoine Guillou on simulation and optimization of sail yachts;</li><li>• Contribute to <i>META</i> project by upgrading from Java and 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>R&amp;D Engineer, Commissariat à l'Énergie Atomique et aux Énergies Alternatives</b> 2014–2017 Supervisors: Mazen Alamir and Patrick Bonnay on cryogenic process control and energetic optimization, within project ANR CRYOGREEN.</p> <ul style="list-style-type: none"><li>• Develop advanced model predictive control strategies including explicit constrained control and hierarchical distributed coordination, via machine learning, applied optimization and numerical algorithms;</li><li>• Dynamic model and simulation of compression stations and cryogenic refrigerators using <i>Simcryogenics</i>; involve in experiments with station 400W 1.8K at SBT and 18kW 4.5K LHC facilities at CERN;</li><li>• Intensive use of Matlab and C (<i>CPLEX</i>, <i>ACADOtoolkit</i>); familiar with PLC (<i>Siemens</i>, <i>Schneider</i>), SCADA and Modbus; technology know-how (cold-box, valve, compressor, flow/pressure/temperature sensors).</li></ul> <p><b>Research Intern, Grenoble Images Parole Signal Automatique Laboratoire</b> Jan–May 2014 Supervisors: Ioan Doré Landau and Luc Dugard, on robust active vibration analysis and 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 and teaching assistant within European Embedded Control Institute IGSC.</li></ul> <p><b>Industrial Intern, Yazaki Corporation</b> Apr–Aug 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 for excellent academic performance</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	<p><b>CS50's Introduction to Computer Science</b>, edX   Harvard University</p> <p><b>Six Sigma and Lean Processional Program</b>, edX   Technische Universität München</p> <p><b>TUM Lean Six Sigma Yellow Belt</b>, Technische Universität München   TUM School of Management</p> <p><b>Semaine d'Étude Maths-Info Entreprises</b>, Agence Maths Entreprises</p>

PUBLICATIONS V. V. Trinh, M. Alamir, P. Bonnay and F. Bonne, **Explicit model predictive control via nonlinear piecewise 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, no. Supplement C, 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.**

SERVICES      **Organization Team of JSIam, Grenoble Innovation for Advanced New Technologies**      Mar 2016

REFERENCES	<b>Kim-Phuc Tran</b>	<i>Associate Professor in Automation and Industrial Informatics</i>
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	<b>Ioan-Doré Landau</b>	<i>Emeritus Research Director at National Centre for Scientific Research</i>
	Email: <a href="mailto:ioan-dore.landau@gipsa-lab.fr">ioan-dore.landau@gipsa-lab.fr</a>	Grenoble Images Parole Signal Automatique Laboratoire
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**Personal Info:** Gender: Male | Marital status: Single | DOB: 20 Dec 1989 | POB: Thanh Hoa (Vietnam)  
**Professions:** Industrial Automation | Process Control & Optimization | Data Analytics  
**Interests:** Hiking | Ping-pong | Reading