curriculum vitae

PERSONAL INFORMATION

Surname	**Nguyen**
Name	**Trong-Doan**
Address	Quyet Thang hamlet, Xich Tho village, Nho Quan district, Ninh Binh province, Vietnam Room 513, Graduate Dormitory 2, National Chiao Tung University, Hsinchu, 30010, Taiwan
Telephone	+886-966638851
E-mail	Nguyentrongdoan.0@gmail.com
Skype	Nguyentrongdoan.0@gmail.com

Nationality	Vietnam

Date of birth	14/10/1993

Education and training

• Date (from – to)	September 2016 - present
• Name and type of organisation providing education and training	National Chiao Tung University; Hsinchu, Taiwan
Duration of the program of study	2 years
• Principal subjects/occupational skills covered	• Advanced Dynamics, Advanced Applied Mathematics • Signal and Systems, Linear System Theory, Digital Control Systems, Nonlinear Control Systems • Artificial Intelligence, Vehicular Vision Systems
• Title of qualification awarded	Master at Mechanical Engineering Department
Final mark obtained	Overall 4.08/4.3 (89.75/100), Temporary Ranking: 12

• Date (from – to)	September 2011 – July 2016
• Name and type of organisation providing education and training	Hanoi University of Science and Technology, Hanoi, Vietnam
Duration of the program of study	5 years
• Principal subjects/occupational skills covered	• Engineering Mechanics I & II, Robotics, Project in Mechatronic System Design, Multibody Dynamics, Analysis and Simulation Software of Dynamic Systems, Programming for Simulation of Robots and Mechatronic Systems, Robot Design

	• Introduction to Computer Science, Microprocessors, Programming in Mechatronics, Data Structures and Algorithms
	• Fundamental of Electronic Engineering, Automatic Control Theory, Control System Design
• Title of qualification awarded	Engineer of Mechatronics
Final mark obtained	Very Good, GPA: 3.22/4.0

• Date (from – to)	October 2009 – June 2011
• Name and type of organisation providing education and training	Luong Van Tuy specialized and gifted high school, Ninh Binh, Vietnam
Duration of the program of study	3 years
• Principal subjects/occupational skills covered	Intensive Physics and Math Studies
• Title of qualification awarded	High School Graduate

graduation thesis

Master thesis - Title	Data-driven model approach method in control Selective Laser Melting process
Language	English
Supervisor	Prof. An-Chen Lee
Thesis Abstract	Selective Laser Melting(SLM) is Rapid Manufacturing process based on powder bed fusion technique which built parts by selective melting of materials in powder form by means of a laser source. SLM method has been applied to create complex free-form metallic objects with highly dynamical structures that cannot be produced by the traditional machining tools or conventional methods like forging, casting or even with supports of Computer Numerical Control (CNC) Machining. This thesis deal with the facing problem of all Laser Powder-Bed Fusion systems, that is how to increase the quality of the final products. By attempts to plan a process of production that adjust process signatures such as laser power, or velocity of the power source, the prototypes should have a better finish for functional performance as well as aesthetics. A large number of factors that might affect the quality of the product originated from equipment such as beam scanning/deflection system, the build chamber environmental control, the powder handling and deposition system or insufficient baseplate thickness. However, the majority error of the finish comes from the process of producing. Process-induced defects are associated with the interaction between the beam, the loose powder, and the previously melted material. Therefore, an advance scan strategy guarantees a uniform temperature distribution over the slices that could increase part geometry of final product. An approach will be proposed in this thesis and be implemented to control SLM process with the hope that it can contribute to increasing quality of final parts. Use prior knowledge process control makes up of consecutive steps embrace independent (or less relevant) values of parameters that are used as the reference in the closed-loop form. The primary task of the real-time controller is guarantees that the system is going on the right track. The aforementioned prior knowledge originated from a series of thermal images captured by a TIM M-1 sensor. Melting pool areas (A) are extracted from those images and be put together with laser powers (P) and scanning velocities (v). An idea is adopted from machine learning to bypass the unidentified "emissivity" – the critical factor governs the thermal distribution of images captured by the thermal sensor either accurate. After that, Eureqa – a symbolic regression tool - is used to generate a model in the form A= f(P, v) which further be applied in closed-loop controlling SLM scheme. A proposal of a control system that can recognize defects or unusual area after a layer scanned from sensing data (temperature map and images) then generate a strategy for the next scanning layer will also be mentioned and urges for further works to construct.

Undergraduate thesis - Title	Evolution algorithms in tuning controller's parameters
Language	Vietnamese
Supervisor	Dr. Quang-Hoang Nguyen
Thesis Summary	Turning parameters of controllers; for instance, P-proportion, I-integral, D-derivative of PID controller; are time-consuming. Even an experienced engineer has to do many tests on his new system to make sure it will work reliably. It also depends on the circumstance and sometimes the inaccuracy of actuators might cause errors if the designer does not handle the case. An automated program that can assigns parameters to controllers in a comprehensive test is time-saving as well as intensify reliable of the system. Evolution algorithms that mimic natural behavior and development are particularly useful in the

	class of optimal problem of dynamical systems when the other methods require high mathematical background, case-by-case depending, and sometimes does not exist an answer. In my thesis, I used Genetic Algorithm (GA) and Particle Swarm Optimization (PSO) algorithm, two of the most reputational algorithms of the topic, to optimize parameters of controllers and compares its performance in a test on 2D overhead Cranes 3dof and 3RRR Planar Parallel Robot. The program was integrated into a project of Viettel R&D, Viettel Corporation, Vietnam.

publications and articles submitted

Author(s) and title	Nguyen Quang Hoang, Nguyen Van Hoi, Nguyen Trong Doan, Pham Van Bach Ngoc, "Automatic PD Controller Tuning Based on Genetic Algorithm for 3RRR Planar Parallel Robot"
Language	English
Publication place	The 4th International Conference of Engineering Mechanics and Automation
Date of publication	Hanoi, August 25th, 2016

Author(s) and title	Nguyen Quang Hoang, Nguyen Trong Doan, "PID controller with Particle Swarm Optimization (PSO) tuning for 2D Overhead Cranes 3dof"
Language	Vietnamese
Publication place	The 2nd National Conference of Engineering Mechanics and Automation
Date of publication	Hanoi, October 8th, 2016

Certifications and Awards

Certifications of language knowledge	IELTS 6.5 (Sep 16th, 2017) - Listening 7.5, Reading 7.0, Writing 6.0, Speaking 5.5
MOOCs certifications	• Machine Learning – Standford ONLINE and Coursera (June 12, 2016) • Control of Mobile Robots – Georgia Institute of Technology and Coursera (July 27, 2016) • CSE1309x: Python Programming – The University of Texas System and edX (March 21, 2016)
Awards	• Academic Achievement Award of National Chiao Tung University, 2017. • Full Scholarship of Ministry of Science and Technology Taiwan for Master students, 2016 (NT\$ 30,000 ~\$1000 per month). • TOKAI GOKYO Scholarship (TOKAI company) for excellent students of Hanoi University of Science and Technology, 2014 (\$500). • Bronze medal, National Mechanics Olympiad Contest, subject: Engineering mechanics, 2013. • Two second prizes, Creative Contest for Youth and Students Ninh Binh, 2011. • Second prize, Provincial Excellent Students Contest, Physics, 2011. • Silver medal, Creative contest for youth and students Vietnam. • Became one in ten Vietnam students participated in "International Exhibition for Young Inventors", Nigeria, 2010. • Third prize, Creative Ideas and Solutions for Saving Energy and Protecting Environment, Ho Chi Minh Communist Youth Union, 2010.

Personal skills and competences Acquired in the course of life and career but not necessarily evidenced by formal certificates and diplomas.	

Mother tongue	Vietnamese

Other language(s)	

	English
• reading	Excellent
• writing	Good
• speaking	Good

	Chinese Mandarin
• reading	Elementary
• writing	Elementary
• speaking	Elementary

Social skills and competences Living and working with other people, in multicultural environments, in positions where communication is important and situations where teamwork is essential (e.g. Culture and sports), etc.	- Saturate with labmates; make friend with international students of department and school who comes from all over the world: France, Russia, Indonesia, Malaysia, Mid-East, Bhutan, Ukraine… - Team player: play badminton with Vietnamese and Taiwanese students three times in a week. - Open-minded: Keen interest in new technologies - Proactive, ready chasing opportunities and taking risks

Organisational skills and competences E.g. coordination and management of people, projects and budgets; at work, in voluntary work (e.g. culture and sports) and at home, etc.	- Structured and simplified my life, as well as willing to optimize the workload or involved task. - I am an introvert: Organizing and leading work groups in respecting and provide conditions for members shine up. - Manage by empowerment, give the team members' chance to step up and take responsibilities.

Technical skills and competences With computers, specific kinds of equipment, machinery, etc.	- Proficient in writing technical documents: Microsoft Words, Excel, Power Point, LaTeX - Programming languages: C/C++ (proficient), Matlab (proficient), Python (proficient), HTML, CSS (good) - Experienced toolboxes: tensorflow, opencv, scikit-learn, numpy, matplotlib, Simulink, Anova, Eureqa, GPTIP…

Artistic skills and competences Music, writing, drawing etc.	I usually write in leisure time about my viewpoint at what I have witnessed or experienced. It evokes my mindfulness, improves communication skills and makes me more confidence. Some have published on my Facebook, others are stored in my notebook.

Other skills and competences Competences not mentioned above.	

Additional information	

annexes	