Vo, Huynh Quang Nguyen

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ABOUT ME

I am an engineering and science enthusiast having the core values of agility, responsibility, and teamwork. To fulfil my dream of becoming an influential researcher in my field, I always push myself out of my comfort zone to achieve my goals. During my free time, I devote wholeheartedly to my lifelong passions: liberal arts, and language.

I can offer my solid understanding of Semiconductor Devices, Optical Metrology, Computer Vision, and Data Science thanks to the experiences I accumulated from my work placements and my studies. Besides, I possess an excellent eye for detail, a hard-working and responsible personality, and project management skills. These skills and experience should make me an ideal candidate for positions related to Semiconductor Design and Manufacturing, Data Analytics, and Machine Learning Operations.

EDUCATION

- **Helsinki Metropolia University of Applied Sciences** — Helsinki, Finland
  Degree in Electronics (B.Tech.) — *September 2014 - April 2018*
  - **Graduated with Honors**: GPA 4.6/5.0
  - **Awards**: Tutor of the Year (2015-2016): for utmost dedication to the well-being and smooth integration of international exchange students.
  - **Learning Paths**: Power Electronics, Embedded Systems, Digital Systems Design, Cognitive Systems.

- **Aalto University** — Espoo, Finland
  Degree in Translational Engineering (M.Sc.) — *September 2018 - December 2020*
  - **Graduated with Honors**: GPA 4.2/5.0
  - **Awards**: Dean's List 2019-2020.
  - **Majors**: Smart Systems Integration; Measuring Technology (focused on Photonics and Optical Metrology).
  - **Minor**: Data Science.

SKILLS SUMMARY

- **Languages**: English (certified C2 level).
- **Programming**: Python (incl. scikit-learn, Pandas, Numpy, TensorFlow, and OpenCV); MATLAB; LabVIEW; Arduino; LaTEX.
- **Knowledge**: Computer Vision; Data Science; Semiconductor Engineering; Optical Metrology; Power Electronics.
- **Soft-skills**: Project Management; Event Planning and Coordination; Public Speaking.

WORK EXPERIENCE

- **Intel Products Vietnam (VNAT)** — Saigon Hi-Tech Park, Ho Chi Minh City, Vietnam
  Process and Equipment Engineer - Deep Learning Scientist — *April 2021 - December 2022*
  - **Machine Learning & Deep Learning Development**: Lead several in-house projects at VNAT about applied deep learning technology in product inspection in downstream operations.
  - **Technical Competency Improvement**: Curate tutorials and sharing sessions on computer vision concepts to support the Image Analytics Center of Excellence (based at Intel Ireland); Coach Python programming and machine learning methods as a mentor of Intel AI Everywhere Community. Both the Center of Excellence and the Community are focusing on democratizing AI-related subjects throughout the entire corporation.
  - **Employee Integration**: Manage communications as well as organize and coordinate events/activities for NextGen Vietnam - a regional subsidiary of Intel NextGen Initiative which focuses on integrating and developing employees' competency.

- **First Solar Vietnam** — Dong Nam Industrial Park, Cu Chi, Vietnam
  Manufacturing Engineer Trainee — *November 2020 - March 2021*
  - **Project**: Established a standardized electroluminescence image database for fault detection and diagnosis in the laser scribing process for thin-film solar panels. The project was completed successfully, and its results were used as a whitepaper for troubleshooting tasks in laser scribing. Additionally, the process monitoring software - developed during the project - was verified and is currently applied to all of First Solar's factories.
  - **Technical Sharing**: Organized several technical sharing sessions about laser physics and optics in engineering. These sessions were well applauded by the attendees - "[the team] have found a lot of knowledge useful that [the team] didn't get at college and university", as quoted by Mr. Tam Huynh (Senior Manufacturing Engineer).

- **SolarBK** Ho Chi Minh City, Vietnam
  Research and Development Associate - Thesis Worker *July 2020 - September 2020*
  - **Project (Master Thesis)**: Developed an AI-based method to evaluate silicon photovoltaic cells' reliability for quality assurance purposes. After 30.09.2020, RMIT University Vietnam became the new sponsor of this project. The project was completed successfully, and the corresponding thesis was published in January 2021.
  - **Fundraising**: Assisted in writing funding applications for two joint-venture projects between SolarBK and their collaborators that were Synergict UK and Arup UK, respectively. These applications were submitted to the Energy Catalyst Round 8, which was a funding competition organized by Innovate UK.

- **Aalto University – Metrology Research Institute** Espoo, Finland
  Research Assistant *March 2019 - December 2019*
  - **Research**: Assisted the research team in a project that was funded by EMPIR about the characterization and standardization of solar cell performance. The project was completed successfully, and the results were published as a conference paper for the Optics in Engineering Symposium (OIE2019) in the Optical Review journal, Springer.
  - **Miscellaneous**: Assisted in the measurement, evaluation, and calibration of optical spectrometry devices.

- **Noiseless Acoustics Oy** Helsinki, Finland
  Electronics Manufacturing and Test Engineer *March 2018 - November 2018*
  - **Analysis**: Developed testing modules for the NL Camera product and conducted reliability analysis using the Failure Mode Effect Analysis (FMEA) methodology. The modules and analysis were successfully implemented and contributed to the advancement of the product's reliability.
  - **Miscellaneous**: Implemented the Inventory Management System that significantly eased the tracking of products in multiple stages (in-progress, finished, reworked, etc.) and component stocks; Assisted in the production of NL Camera that enabled the company to achieve its targeted quota to meet the increasing market.

- **MDS Finland Oy** Helsinki, Finland
  Occupational Health Research and Development Engineer - Thesis Worker *May 2017 - October 2017*
  - **Project (Bachelor Thesis)**: Developed a system for Machine Safety for Construction Industry. The thesis was completed successfully and served as a precursor to creating one of MDS' first products.
  - **Analysis**: Conducted a study about the Safety of Excavators in the Finnish Construction Industry that helped the company to realize there was a potential market for safety systems in this industry.

TEACHING EXPERIENCE

- **Aalto University** Espoo, Finland
  Teaching and Exercises Assistant *March 2019 - June 2019*
  - **Training**: Pedagogy Training for Teaching Assistant.
  - **Courses**: ELEC-E5710 Sensors and Measurement Methods by Dr. Petri Kärhä.

- **Aalto University** Espoo, Finland
  Master Thesis Advisor *Jan 2022 - June 2022*
  - **Master Thesis**: Crown-of-Thorns Starfish (COTS) detection by state-of-the-art YOLOv5, authored by Phuong Truong.

- **RMIT University Vietnam** Ho Chi Minh City, Vietnam
  Visiting Lecturer *Jan 2023*
  - **Guest Lecture**: Optics/Optoelectronic Applications in Reality - How to make frames and infer people.

PUBLICATIONS

- **Case study: Utilising of Deep Learning Models for Fault Detection and Diagnosis of Photovoltaic Modules to Improve Solar Energy Constructions' O&M Activities Quality (Book Chapter)**: Khuong Nguyen-Vinh, Huynh Vo, Khoa Nguyen-Minh, Minh Hoang. Information Systems Research in Vietnam (Second Volume); Springer; 2023. Currently under peer review. Link to the book is here.

- **Measurement setup for differential spectral responsivity of solar cells (Article)**: Petri Kärhä, Hans Baumgartner, Janne Askola, Kasperi Kylmänen, Benjamin Oksanen, Kinza Maham, Huynh Vo & Erkki Ikonen. Optical Review, Volume 27, p. 195–204; Springer; 2020. Link to the article is here.

- **Safety System in Construction Industry: A protection system preventing fatal injuries by excavators in construction sites (Thesis)**: Huynh Vo. Open Repository of the Universities of Applied Sciences; 2018. Link to the thesis is here.

- **Realization and Verification of Deep Learning models for Fault Detection and Diagnosis of Photovoltaic Modules (Thesis)**: Huynh Vo. Aalto Learning Center; 2020. Link to the thesis is here.

PROJECTS

- **Intelligent Inspection and Automatic Disposition System**   Intel Products Vietnam
  Software Architect   *June 2022 - December 2022*
    - **Description**: The project was about developing a decentralized intelligent inspection system for material handling processes at downstream operations. The preliminary results have demonstrated the system's feasibility, and the project has gained interest from multiple management levels at Intel Vietnam. Additionally, the project will be featured at Intel 2023 AI Everywhere Conference as a prime example of how AI is applied at Intel.

- **Applied Deep Learning on Inspection in Reel Packaging**   Intel Products Vietnam
  Software Architect   *August 2021 - August 2022*
    - **Description**: The project was about the development of an automated inspection program that is capable of detecting whether packaging issues (e.g., out-of-pocket) occur and prompting technicians/operators to take corrective actions with haste during the entire reel packaging process. The project was completed successfully and was documented as a process of the record.

- **Modelling and Control Methods in Renewable Energy Systems**   Aalto University, Finland
  Project Manager   *January 2020 - June 2020*
    - **Description**: The project was about the development of a feasible algorithm that allows the photovoltaic system to generate maximum power to apply short-haul distance electric vehicle charging stations. The project was funded by Fortum Oy, one of the largest energy companies in Finland.

- **Life Cycle Assessment of the Samsung Galaxy Watch**   Aalto University, Finland
  Project Manager   *September 2019 - December 2019*
    - **Description**: The project was about the implementation of the life cycle assessment (LCA) of the recently introduced Samsung Galaxy Watch. The project aimed to raise more self-awareness about the environmental impacts of this product.

- **International Sensor Development Project**   Helsinki Metropolia University of Applied Sciences, Finland
  Sensor System Designer   *October 2016 - February 2017*
    - **Description**: This was a collaboration project between Helsinki Metropolia University of Applied Sciences (Finland) UAS and Osnabrück Hochschule (Germany) to develop an indoor quality supervisor system. The system aimed to be capable of detecting air quality, and sending and visualizing measured data to users via an in-house mobile application; the system also included an integrated warning functionality that could only be triggered when the measured levels exceed threshold ones. The project was completed successfully, and plans were laid down to improve the system further using the new Bosch sensor introduced in Q2'17.

RECOMMENDATIONS

- **Petri Kärhä, D.Sc.(Tech.)**: Docent of Aalto University
    - **Mobile**: +358 505 968 469
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- **Simo Särkkä, D.Sc.(Tech.)**: Associated Professor at Aalto University
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- **Vinh-Khuong Nguyen, Doctoral Candidate**: Associated Lecturer of RMIT University
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- **Phuong-Tuan Nguyen Phan, B.Tech.**: Senior Manufacturing Engineer of First Solar Vietnam
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- **Thanh Hai Nguyen, M.Sc. (Tech.)**: Manufacturing Engineer Manager of First Solar Vietnam
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- **Harley Fagan, B.Tech.**: Engineering Manager
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- **Jonathan Byrne, D.Sc.(Tech.)**: AI Solutions Manager
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