LE TUAN

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Born on March 1st, 1998
Nationality: Vietnamese



About me

I am a Ph.D. student in applied machine learning. My expertise in this field motivates me to solve practical and innovative challenges such as anomaly detection and computer vision.

Education

2021 – 2024 (expected): Ph.D. student at Roberval Laboratory, University of Technology of Compiègne, France 2016 – 2021: Engineer Degree in Electrical and Electronics, University of Science and Technology - Da Nang, Vietnam

Professional Experience

2021 – 2024	Ph.D. student at Roberval Laboratory, University of Technology of Compiègne, Sorbonne Alliance University, France ■ My research focuses on applying machine learning to develop anomaly detection models in Industry 4.0. ✓ Identify an engine malfunction through vibration and temperature sensors. ✓ Identify a defective product through images. ✓ Identify an issue in the internal combustion engine control system.
2021	Electrical Engineer at VATEC Energy Engineering Consulting Co. Ltd. Assessed wind resources for the central region of Vietnam.
2020	Technician Internship at National Power Control Center, Da Nang, Vietnam Optimized electricity production to meet the demand in the central region.
2019	Technician Internship at Da-Nhim Hydroelectric Power Plant (240 MW), Vietnam Monitored electrical generator operations.
2018	Laborer Internship at Electrical Laboratory, University of Science and Technology - Da Nang, Vietnam Assembled, configured, and maintained electrical equipment.

Skills

Programming:

Pascal, C, C++, Python, Matlab, OOP, Shell

Information Systems:

- Database: SQL, MySQL administration and optimization
- Artificial Intelligence: Deep Learning, Machine Learning, Clustering, Classification

Power Systems:

- Simulation of electrical systems: Matlab, Python, ETAP, PowerFactory DIgSILENT
- Economic and technical system optimization: Python, Matlab
- Power System Analysis (Python)

Others:

Project Management, Quality Management

Projects and Competences

- Identify a defective product through images.
- Identify anomalies in the electric motor based on sensor-collected data (Unsupervised learning for multivariate time series).
- Identify unqualified fuel tanks through thermal imaging (Anomaly detection and localization for images).

• Simulation and optimization of electricity generation capacity in a 500 kV power system in Vietnam (PyPSA: Python for Power system analysis).

List of Publications

- Tuan LE, Hai-Canh VU, Vu-Linh NGUYEN, Amelie PONCHET-DURUPT, Nassim BOUDAOUD, Zohra CHERFI-BOULANGER, Boosting Anomaly Detection and Localization via Contextual Synthetic Anomalies. Under preparation.
- Tuan LE, Hai-Canh VU, Amelie PONCHET-DURUPT, Nassim BOUDAOUD, Zohra CHERFI-BOULANGE, Thao NGUYEN-TRANG, 2024. Unsupervised detecting anomalies in multivariate time series by Robust Convolutional LSTM Encoder-Decoder (RCLED). Neurocomputing Journal, DOI: https://doi.org/10.1016/j.neucom.2024.127791, Code: https://github.com/nuatel/RCLED.git
- Tuan LE, Hai-Canh VU, Amelie PONCHET-DURUPT, Nassim BOUDAOUD, Zohra CHERFI-BOULANGE, 2023. Forecasting product quality using peephole long short-term memory. CIGI Qualita MOSIM 2023, DOI: 10.60662/8gn5-5575
- Duong, M. Q., Nguyen, H. H., Le, T., & Mussetta, M. (2019, June). New planning for the 500kv Vietnamese grid with high penetration of renewable energy sources. In 2019 IEEE Milan PowerTech (pp. 1-6). IEEE. DOI: 10.1109/PTC.2019.8810879

List of Other Publications

- Tuan LE, Hai-Canh VU, Amelie PONCHET-DURUPT, Nassim BOUDAOUD, Zohra CHERFI-BOULANGER, 2023. Explainable Artificial Intelligence (XAI) for non-conforming product detection: an application to fuel tank manufacturing. The 12th IMA International Conference on Modelling in Industrial Maintenance and Reliability (MIMAR).
- Tuan LE, Hai-Canh VU, Amelie PONCHET-DURUPT, Nassim BOUDAOUD, Zohra CHERFI-BOULANGER, 2022. A deep learning approach for control chart patterns (CCPs) Prediction. The 32nd European Safety and Reliability Conference (ESREL 2022).

Languages

Vietnamese: Native

English: B2French: A2

Interests

- Participation in high school football competitions (second division) and university football team members.
- Participating in running competitions in Paris.