Chuong Dang TA

Stockholm, Sweden | Willing to relocate

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About Me

Wind energy and data enthusiast specializing in data-driven power forecasting and renewable systems optimisation. Published author in journals with impact factors of 10.9 and 8.3 on hydrogen integration and decarbonisation pathways. Currently completing an Erasmus Mundus MSc (**DENSYS**) through a thesis at **rebase.energy** (Stockholm), where I apply machine learning - Quantile Regression Forests, Temporal Convolutional Networks, and XGBoost to predict atmospheric icing and power losses in cold-climate wind farms using SCADA and NWP data.

Education and Training

Univeristy of Lorraine, France & Politechnique of Turin, Italy - densys.univ-lorraine.fr *Sep 2024 – Sep 2026*

Master of Science in Decentralised and Smart Energy Systems (DENSYS)

A two-year Erasmus Mundus Joint Master's program (120 ECTS) focusing on the modeling, control, and optimization of decentralised and renewable energy systems.

Selected Coursework:

- Univeristy of Lorraine: [Data and Forecasting in Microgrids], [Optimal Local Design Energy Network], [Chemical and Electrochemical Processes Involved in Energy].
- Politecnique of Turin: [Wind and Ocean Energy Plants], [Polygeneration and Advanced Energy Systems], [Smart Electricity Systems].

Key Projects:

- *Machine Learning (ML) Enhanced **LCA** of a North Sea Offshore Wind Farm*: Developed integrated LCA-ML framework achieving 12,600× computational acceleration (R^2=98.5%) for rapid environmental optimization across 285 design scenarios.
- *Decarbonising Aviation*: Conducted a techno-economic and environmental assessment of algae-based biofuels as sustainable aviation fuel (SAF) pathways.

Hanoi University of Science and Technology (HUST), Vietnam - hust.edu.vn/en *Aug 2018 – Jan 2023*

Bachelor in Thermal Engineering

Graduated **1st/218** with a CGPA of 3.54/4.00 from Vietnam's leading technical university. Core studies covered thermodynamics, heat transfer, and power plant systems.

Bachelor Thesis: *"Techno-Economic Analysis of Internal Combustion Engines Using Diesel and LNG"* (Grade: 9.5/10)

Scientific Research - ORCID: 0009-0009-7530-7430

- Dang-Chuong Ta; Thanh-Hoang Le; Long Van Phan; Hoang-Luong Pham, "Feasibility Analysis of Hydrogen Co-Firing in Vietnam's Gas Power Plants for the Period 2035–2050," *Energy Conversion and Management*, Impact Factor: 10.9. DOI: 10.1016/j.enconman.2025.120192
- Dang-Chuong Ta; Thanh-Hoang Le; Hoang-Luong Pham, "An Assessment of the Potential for Large-Scale Hydrogen Export from Vietnam to Asian Countries: Techno-Economic Analysis, Transport Options, and Energy Carrier Comparison," *International Journal of Hydrogen Energy*, Impact Factor: 8.3. DOI: 10.1016/j.ijhydene.2024.04.033

Work Experience

rebase.energy, Stockholm, Sweden - rebase.energy *Feb 2026 – Jul 2026*

Master Thesis Research Intern

- **Icing & Power Loss Modeling:** Developing a machine learning pipeline to detect and forecast wind turbine icing and subsequent power losses in cold climates using SCADA and NWP data. Implemented a statistically refined **IEA Task 19** methodology, utilizing air density correction and IQR-based

outlier detection to classify icing events and quantify production deficits. Engineered a turbine-to-farm upscaling framework using **Optimal Majority Thresholding** to aggregate individual turbine signals into coherent farm-level labels.
- **Advanced ML & Probabilistic Forecasting:** Investigating the predictive performance of traditional models (**XGBoost, RF, SVR**) against deep learning architectures (**TCN, LSTM, GRU**) and the **TIGER** framework for lead times up to 48 hours. Integrating physical **Makkonen** accretion models with **Quantile Regression Forests (QRF)** to provide probabilistic forecasts and uncertainty quantification (pinball loss, prediction interval coverage) for day-ahead energy market operations.

Vietnam Petroleum Institute (VPI), Hanoi, Vietnam - vpi.pvn.vn/en *Feb 2024 – Aug 2024*
Junior Researcher
Contributed to Vietnam's national hydrogen roadmap by conducting feasibility studies on the integration of green hydrogen into thermal power plants. Handled techno-economic modeling, hydrogen cost benchmarking, and policy analysis.

Vietnam Initiative for Energy Transition (VIETSE), Hanoi, Vietnam *May 2023 – Sep 2023*
Research Intern
Modeled hybrid renewable systems (solar, wind, BESS) using HOMER Pro and Python; analyzed system performance under different policy scenarios; contributed to policy briefs for Thai and Vietnamese stakeholders.

Technical Skills

- **Data Science & Optimisation**: Developing ML models for icing power loss forecasting and predictive maintenance, applied **MILP, MINLP, and heuristic algorithms** (e.g., genetic algorithms) in Pyomo to optimize renewable energy systems.
- **Technical Toolset:** Python (PyTorch, Scikit-learn, Pyomo, PyAPEP, PyWake), AI Agent (Claude Code), MATLAB/ Simulink, Modelica, QBlade, HOMER Pro, GIS, Aspen Plus, Typst, LaTeX.

Honors & Awards

- **Erasmus Mundus scholarship** for DENSYS Joint Master Program
- **JNED Award** for research on Japan's nuclear facilities (2023)

Short Courses & Certifications

- Wind Energy- Technical University of Denmark (DTU)
- 4th Training Course on Nuclear Power Plant Technology - The International Nuclear Energy Development of Japan Co., Ltd (JINED) (studied in Vietnam and Japan)
- Optimisation with Python: Complete Pyomo with Bootcamp A-Z
- Hydro, Wind & Solar Power - École Polytechnique de Paris

Language

- Vietnamese (Native)
- English (IELTS 7.5 - Full Professional)
- German (A2), French (A1)

Referees

Prof. Fabrice Lemoine - Chair of the DENSYS Erasmus Mundus Joint Master Degree, Université de Lorraine
fabrice.lemoine@univ-lorraine.fr

Marta Gandiglio - Associate Professor, Department of Energy (DENERG), Politecnico di Torino
marta.gandiglio@polito.it