

Chuong Dang TA

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About Me

Wind power enthusiast with research interests in wake effect modeling and wind farm layout optimization. Published work in hydrogen technologies and power system decarbonization. Currently developing skills in Python and optimization tools, and learning how to apply machine learning techniques to wind energy challenges.

Education and Training

Sept 2024 – July 2025

Université de Lorraine, Nancy, France & Politecnico di Torino, Turin, Italy - Website: densys.univ-lorraine.fr

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:

- Université de Lorraine (Nancy): [Data and Forecasting in Microgrids], [Optimal Local Design Energy Network], [Chemical and Electrochemical Processes Involved in Energy].
- Politecnico di Torino (Turin): [Wind and Ocean Energy Plants], [Polygeneration and Advanced Energy Systems], [Smart Electricity Systems].

Key Projects:

- *A Machine Learning Enhanced Environmental Life Cycle Assessment Framework of a North Sea Offshore Wind Farm*: Developed integrated LCA-ML framework achieving $12,600 \times$ computational acceleration ($R^2=98.5\%$) for rapid environmental optimization across 285 design scenarios, identifying manufacturing location and capacity factor as dominant decarbonization levers.
- *Decarbonising aviation: Evaluating Algae-Based Biofuels for Sustainable Aviation Fuel (SAF) Production*: Conducted a techno-economic and environmental assessment of algae-based biofuels as sustainable aviation fuel pathways for decarbonising aviation.

Aug 2018 – Jan 2023

Hanoi University of Science and Technology (HUST), Vietnam - Website: hust.edu.vn/en

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](https://doi.org/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](https://doi.org/10.1016/j.ijhydene.2024.04.033)

Work Experience

rebase.energy, Stockholm, Sweden - Website: rebase.energy

Feb 2026 – July 2026

Master Thesis Research Intern

Developing machine learning models for icing detection and power loss forecasting in wind farms operating in cold climates. Building predictive models using SCADA data and weather information to forecast short-term power output with uncertainty quantification, supporting operational planning and power market decisions.

Vietnam Petroleum Institute (VPI), Hanoi, Vietnam - Website: vpi.pvn.vn/en

Feb 2024 – Aug 2024

Junior Researcher

Contributing to Vietnam's national hydrogen roadmap by conducting feasibility studies on the integration of green hydrogen into thermal power plants. Responsibilities include techno-economic modeling, hydrogen cost benchmarking, and policy analysis for power sector decarbonization.

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 on renewable integration and energy security.

Technical Skills

- **Optimization Techniques:** Applied MILP, MINLP, and heuristic algorithms (e.g., genetic algorithms) in Pyomo to optimize renewable energy systems; developing Machine learning model for wake effects.
- **Technical Toolset:** Python (Pyomo, PyAPEP, PyWake, Scikit-learn, XGBoost), MATLAB/Simulink, Modelica, QBlade, HOMER Pro, GIS, Aspen Plus, LaTeX, Microsoft Office.

Short Courses

- Wind Energy, Technical University of Denmark - DTU
- 4th Training Course on Nuclear Power Plant Technology, JINED, Japan (Nov 2022)
- Optimisation with Python: Complete Pyomo with Bootcamp A-Z
- Hydro, Wind & Solar Power: Resources, Variability & Forecast, École Polytechnique

Honors and Awards

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

Language Skills

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

Extracurricular Activities

2020 - 2022, HUST, Vietnam Vice President, SHEER English Club (SEC)
Organized technical English training sessions for thermal engineering students