Sami Ben Brahim

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Education

PhD student: Information and Systems Engineering *Sep. 2023 – ongoing*
Concordia University Montreal, Canada
Supervisors: Nizar Bouguila and Manar Amayri

Master of Engineering: Information Processing and Complexity of the Living *Sep. 2020 – Nov. 2021*
ENIT Tunis, Tunisia
Thesis: Natural Gas Peak Demand Forecasting in Tunisia

Note: In Tunisia, the Master of Engineering is a one-year program that can be completed in parallel with the final year of the Bachelor of Engineering. The Bachelor's and Master's theses are typically the same.

Bachelor of Engineering: Modeling for Industry and Service (MIndS) *Sep. 2018 – Sep. 2021*
ENIT Tunis, Tunisia

Research Interests

Time Series Forecasting, Energy Load Forecasting, Representation Learning, Machine Learning.

Experience

Teaching Assistant *Jan. 2024 – ongoing*
Concordia University Montreal, Canada
– Teaching Assistant for the following courses: COMP 6721, COMP 432, COMP 425, INSE 6180, COMP 233, COEN 243, ENCS 282.
– Main tasks: leading tutorials, providing technical support to students, and grading assignments/projects.

Lecturer *Nov. 2024*
Concordia University Montreal, Canada
– Delivered a lecture on Time Series Forecasting as part of INSE 6180 course.

Research Assistant *Apr. 2022 – Mar. 2023*
Africa Business School Rabat, Morocco
– Tasks: bibliographic research, implementation of optimization algorithms, course preparation, and grading.

Research Intern *Dec. 2021 – Marc. 2022*
Chair for Energy System Economics (FCN-ESE), RWTH Aachen University Aachen, Germany
– Main task: Cluster analysis of residential buildings based on their longitude, latitude, and area-specific heat demand.

Publications

Google Scholar

One-day-ahead electricity load forecasting of non-residential buildings using a modified Transformer-BiLSTM adversarial domain adaptation forecaster. *Apr. 2025*
– **Sami Ben Brahim**, Manar Amayri, Nizar Bouguila, *International Journal of Dynamics and Control*.

Long-term natural gas peak demand forecasting in Tunisia Using machine learning. *May. 2022*
– **Sami Ben Brahim**, Mohamed Slimane, *5th International Conference on Advanced Systems and Emergent Technologies (IC_ASET)*.

Relevant Courses & Certificates

– IFT 6135 Representation Learning (Instructor: Aaron Courville)
– COMP 6321 Machine Learning (Instructor: Yang Wang)
– INSE 6180 Security and Privacy Implications of Data Mining (Instructor: Nizar Bouguila)
– Deep Learning Specialization (online, deeplearning.ai)
– Machine Learning (online, Stanford University)

Skills

– **Languages:** Python, MATLAB, C++, R, LaTeX.
– **Libraries:** Pytorch, TensorFlow, Keras, Scikit-Learn, Numpy, Pandas, OpenCV.
– **Technologies:** GitHub.

Languages

Arabic (Native), English (Fluent), French (Fluent).

Honours & Scholarships

Erasmus+ ICM Scholarship *2021*
Exchange semester at *Rouen University — Awarded but not undertaken due to COVID-19 travel restrictions*