Julie Keisler

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Education

EDF R&D - University of Lille - INRIA Paris *Feb 2022 – Feb 2025*
PhD in Computer Science

- Automated Deep Learning for electricity signals forecasting: application to short-term demand and wind power forecasting.
- Supervised by Pr. Claire Monteleoni, Pr. El-Ghazali Talbi and Margaux Brégère.

Télécom Paris *Sept 2018 – Sept 2021*
Engineer Degree (MS in Computer Science)

- GPA: 3.92/4.0.
- Major in signal processing for AI, minor in computer graphics and interactive systems.

ETH Zürich *Sept 2020 – Feb 2021*
Exchange student

- Semester Thesis in the Power System Laboratory: Benchmark electric power consumption forecasting algorithms, supervised by Yi Wang.
- **Coursework:** Power Market - Portfolio and Risk Management, Neural Network Theory, Environmental Systems Data Science, Corporate Sustainability.

Lycée Montaigne, Bordeaux *Sept 2016 – Sept 2018*
*CPGE, MPSI/MP**

- GPA: 3.9/4.0.
- Undergraduate studies to prepare for competitive entry exams to french engineering schools (Grandes Ecoles). Subjects studied: Mathematics, Computer Science, Physics, French literature, German and English.

Experience

Teaching Assistant *Gif-sur-Yvette, Feb 2024 –*
Faculté des Sciences d'Orsay - Université Paris Saclay

- Practical Work: Introduction to Deep Learning, for the MS Mathematics and AI.

Data Scientist Intern - 6 months *Rueil-Malmaison, 2021*
Sagemcom

- Data Analysis and load forecasting for a rural electrification project in Madagascar.
- Development of microservices for customers (Docker, Jenkins, Spark technologies).

Selected Publications

An algorithmic framework for the optimization of deep neural networks architectures and hyperparameters. June 2024

Julie Keisler, El-Ghazali Talbi, Sandra Claudel, Gilles Cabriel

Journal of Machine Learning Research, 25(201):1 - 33

Automated Deep Learning for Load Forecasting. Sept 2024

Julie Keisler, Sandra Claudel, Gilles Cabriel, Margaux Brégère

International Conference on Automated Machine Learning, ABCD (main) track.

WindDragon: Enhancing wind power forecasting with Automated Deep Learning. May 2024

Julie Keisler, Etienne Le Naour

ICLR, Tackling Climate Change with Machine Learning workshop.

Automated Spatio-Temporal Weather Modeling for Load Forecasting. Sept 2024

Julie Keisler, Margaux Brégère

International Ruhr Energy Conference, best paper award.

A Bandit Approach with Evolutionary Operators for Model Selection. Aug 2024

Margaux Brégère, ***Julie Keisler***

International Workshop on Resource-Efficient Learning for Knowledge Discovery, ACM SigKDD.

Various Research activities

Python package DRAGON. *Documentation*

- Python package for the optimization of deep neural networks architectures and hyperparameters.

Quantmetry/Capgemini Hackathon: Flood prediction challenge. *Jan 2024 - April 2024*

- Prediction of flood risk maps without streamflow data.
- Winning proposition with a CNN-based solution.

Other Hackathons.

- EDF Challenge Data Science 2023, Electric Vehicle Load Forecasting, Special mention.
- Hack4Good 2020, ETH Zürich, project with the NGO Impact Initiatives for curbstoning detection.

Conference Reviewer.

- ICANN24, CCAI workshop at NeurIPS24 and 2024 IEEE Congress on Evolutionary Computation (CEC).

MS internships supervision. *2024*

- Global forecasting models for a large number of time series, EDF R&D.
- Future evolution of the wind resource and the interest of machine learning methods for statistical wind downscaling, EDF R&D and INRIA Paris.
- Automated selection of adaptive additive models, application to load consumption forecasting, EDF R&D.

Selected Talks

ENBIS Conference 2024. *Leuven, Sept 2024*

- A Bandit Approach With Evolutionary Operators for Model Selection: Application to Neural Architecture Optimization for Image Classification.

55es Journées de Statistique de la SFdS. *Bordeaux, June 2024*

- Mutant-UCB: entre bandits et algorithme évolutionnaire, une approche pour la sélection de modèles.

ConfStochStatML workshop, Wolfgang Pauli Institute. *Wien, Sept 2023*

- Short-term load forecasting using optimized Deep Neural Networks.

54es Journées de Statistique de la SFdS. *Brussels, July 2023*

- Algorithme de bandits pour l'optimisation des hyperparametres de réseaux de neurones.

PGMO Days. *Palaiseau, Nov 2022*

- Evolving directed acyclic graphs for Automated Deep Learning: application to short-term load forecasting.

OLA Conference. *Syracuse, July 2022*

- Deep Transformers Optimization for load forecasting.

Skills

Programming Languages: Python, R, C++

Packages: PyTorch, TensorFlow, Scikit-Learn, Numpy, Pandas.

Tools: Linux, Latex, Git, Slurm on HPC, MPI, Docker.

Languages: French (native), English (fluent), German (intermediate).

Others: Football, guitar (end of musical studies certificate).