Aleksei Mashlakov

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Senior Algorithms Engineer

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Experience

November 2023 – **Technical Lead**, *Centrica*, Antwerp, Belgium.
- Planning and leading a technical roadmap for developing new dispatch algorithms

March 2022 – **Research Engineer**, *Centrica*, Antwerp, Belgium.
November 2023
- Developed online feedback optimisation algorithms for behind-the-meter resources
- Engineered a set of libraries for benchmarking and assessment of dispatch algorithms
- Formulated a market design framework to enhance the efficiency of isolated energy systems
- Developed a business simulator to support customer propositions

September 2017 – **Researcher**, *LUT University*, Lappeenranta, Finland.
December 2021
- Applied ML and SO for multi-objective predictive management of battery storage
- Deployed ML and MILP based service for bidding of battery storage to reserve market
- Formulated MILP for techno-socio-economic optimization of prosumer battery storage
- Applied deep learning models to multivariate probabilistic energy forecasting problems

March 2020 – **Visiting Researcher**, *University of Leeds*, Leeds, UK.
August 2020
- Adapted decentralized combinatorial optimization for grid-oriented flexibility management

Education

2017–2021 **D.Sc. (Tech) in Energy Market and Solar Economy**, *LUT University*, Finland.
- 6 month research exchange to School of Computing, University of Leeds, UK; *With Honors*

2015–2017 **M.Sc. (Tech) in Electrical Engineering**, *LUT University*, Lappeenranta, Finland.
- Double degree program with NRU MPEI, Russia, *With Honors*

2011–2015 **B.Sc. (Tech) in Electrical Power Engineering**, *NRU MPEI*, Moscow, Russia.

Projects

2024 **Hybrid Energy Forecasting and Trading Competition**, *side project*.
- Developed ML pipeline for forecasting and imbalance trading of wind and solar power plants

2023 **M6 Forecasting Competition *(Prize-winner)***, *side project*.
- Applied ML and portfolio optimisation methods for stock bidding and rank forecasting

2021 **DER Flexibility registry**, *side project*.
- Developed a geospatial flexibility registration platform for distributed energy resource

Skills

Coding	Python, R, LaTeX, Bash
ML operations	Polars, Pandas, GluonTS, DARTS, PyTorch, Sklearn, Ray, MLFlow, Optuna
OR software	cvxpy, I-EPOS, scipy
Workflows	OOP, CI/CD, EDA, parallel programming
Visualization	plotly, matplotlib, seaborn
Web Development	Flask, Streamlit, Tornado, Grafana, InfluxDB, Redis
CI/CD	AWS, Docker, K8s, Git, pytest
Soft skills	public speaking, teamwork, divergent thinking, self-management, perseverance

Languages

English - Proficient user; Dutch - Basic