# Thomas Falconer Ph.D. Candidate | Data Scientist | Software Engineer

#### Links

LinkedIn (thomas-falconer) Website GitHub (t

#### Skills

Python, g AWS, Git, Machine Optimiza Visualisat Software Model fit

#### Awar

| Chemical Engineering    |
|-------------------------|
| Departmental Prize,     |
| Heriot-Watt Dean Award, |
| Chevron Prize for Best  |
| Student in a Team       |
| Environment             |

#### Comn

Academi several ir countries NeurIPS

### Public

2 first aut (under re publication Machine 1 first au **IEEE** Tran Systems.

### Certifications

Qualified European Power Exchange Trader, 2x Certified CRM Consultant

#### Voluntary Work

Danish Data Science Academy mentor for aspiring data scientists, software engineers, etc.

I assist in the running of a sustainability-driven co-working space, which involves: managing a volunteer team, partnership management, etc.

## **Experience**

| (thomasfalconer)<br>tdfalc)   | 06/22-Now   | <b>Freelance</b> Lor Software Engineer, Data Scientist, Business Consultant Providing support with tasks related to software engineering, and modelling.   | ndon, UK (Remote)<br>data analytics   |  |
|---|-------------|--|---------------------------------------|--|
| golang, Julia, R, SQL,<br>, Jupyter, HTML, CSS<br>learning<br>ation<br>tion<br>e Engineering<br>tting                                       | 12/20-05/22 | Arenko London, UK<br>Data Scientist<br>Developed and productionised probabilistic time-series models for forecast-<br>ing electricity market prices. Established MLOps pipelines, including feature<br>store, model versioning (mlflow), model serving with production-level Python<br>code (FastAPI). Helped develop data engineering, orchestration (Prefect) and<br>digestion (RDBMS) pipelines. Assisted the development of stochastic market<br>optimization to increasing automated trading revenues. Created interactive<br>visualisations of market opportunities (matplotlib, plotly, Streamlit, Dash). |                                       |  |
| l Engineering<br>Iental Prize,<br>/att Dean Award,<br>Prize for Best<br>in a Team   | 10/20-12/20 | University College London London, UK   Teaching Assistant (Energy and Artificial Intelligence Lab) Assisted delivery of postgraduate modules in probability, statistics, programming for data analysis, optimization and machine learning.   |                                       |  |
| nent<br><b>nunication</b><br>c presentations in<br>nstitutions and<br>s incl. INFORMS,  | 05/20-10/20 | Invenia Labs Cambridge, U<br>Machine Learning Researcher (Intern)<br>Applied (geometric) deep learning to augment traditional optimization methods for power grid operation.   |                                       |  |
| and ACM.  | Education   |  |                                       |  |
| cations<br>thor pre-prints<br>eview), 1 first author<br>on in Journal of<br>Learning Research,<br>thor publication in<br>hsactions on Power | 2022-Now    | <b>Ph.D.</b> Electrical Engineering Technical Univ<br>Focus areas: Mechanism Design, Data Markets, Machine Learnin<br>and Game Theory, all within a power systems context.<br>Working Title: Al for Electricity Market Design  | rersity of Denmark<br>g, Optimization |  |
|   | 2019–2020   | <b>M.Sc.</b> Data Science, Power Systems, (Distinction, Top 5% in Year) UCR<br>Focus areas: Statistical Data Analysis, Supervised Learning, Unsupervised Learning, Advanced Energy System Modelling, Spatial Analysis of Energy Data, Built Environment and Transport Analytics.   |                                       |  |

<u>Thesis</u>: *Reducing the computational cost of AC Optimal Power Flow with Geomet*ric Deep Learning

**B.Eng.** *Chemical Engineering, (First Class, Top in Year)* 2014-2019 Heriot-Watt Univeristy Focus areas: Chemical Reactivity, Chemical Kinetics, Multi-Phase Thermodynamics, Fluid Mechanics, Separation Processes, Chemistry of Materials, Process Control and Optimization. Thesis: Biofuel synthesis from Lignocellulosic Biomass using Fermentation and

Borrowed Hydrogen Chemistry

2016-2017 **B.Sc.** Operations Research (Year Abroad) University of Amsterdam Focus areas: Probability Theory, Statistics, Calculus, Linear Algebra, Econometrics, Operations Research, Microeconomics, Macroeconomics, Programming for Numerical Analysis.

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