

# Alexey Dronov

alexey.dronov@outlook.com • 07728 211527 • linkedin.com/in/alexey-dronov • github.com/AlexeyDronov

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MSc Data Science graduate with a passion for developing LLM-driven financial instruments and building end-to-end data pipelines. Developed a distributed financial prediction system combining ETF stock time series with LLM-derived sentiment – reducing error by 16%. Eager to contribute to a dynamic team with an innovation-driven approach.

## SKILLS

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**Programming:** Python (Proficient), SQL (Proficient), Scala (Intermediate)

**Machine Learning & AI:** PyTorch, Scikit-learn, Numpy, Optuna, Hugging Face Transformers

**Data Management:** Apache Spark, PySpark, Databricks, GCP, Pandas, FastAPI, Git

## PROJECTS

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### Predicting Financial Markets using LLMs (Thesis) May 2025 – Aug 2025

- Built a multimodal prediction system combining ETF time series with LLM-derived sentiment (FinBERT, FinGPT), automating distributed model training on Google Cloud and model optimisation using PyTorch and Optuna.
- Improved next-hour prediction MAE by 16% over a sentiment-free baseline on a test dataset and developed a custom 6-class sentiment schema validated through domain review, supporting explainable forecasting.

### FLW Data Challenge (Winner) Feb 2023 – Feb 2023

- Built a data pipeline to predict solar panel output from weather data, using Pandas for pre-processing and Scikit-learn for model development and validation.
- Achieved 0.94  $R^2$  on test data and co-presented findings to academic and industry stakeholders, winning first place in the competition.

### ASA Datafest 2024 (Runner-Up) Mar 2024 – Mar 2024

- Analysed online learning platform data with Python and R, identifying correlations between student engagement and performance. Built an interactive Shiny dashboard to visualise study patterns.
- Delivered insights to academic and industry stakeholders, securing second place in the cross-university competition.

## EDUCATION

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### The University of Edinburgh

MSc Data Science | Predicted: Distinction Sep 2024 – Aug 2025

- **Relevant Modules:** Natural Language Processing, Data Science at Scale with Scala, Machine Learning, Distributed Systems, Computational Neuroscience

BSc Mathematics | Upper Second-Class Honours (2:1) Sep 2020 – May 2024

- **Thesis:** "Image Analysis" (79%) – Utilised PyTorch framework and YOLO architecture to detect and classify objects in large datasets. Achieved 94% accuracy on a traffic light detection task.
- **Relevant Modules:** Statistics, Operational Research, Time Series Analysis, Multivariate Data Analysis, Number Theory

## LEADERSHIP EXPERIENCE

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### Club Treasurer & Men's Captain Sep 2022 – May 2024

University of Edinburgh Sport Clubs (EUKBC, EULTC)

- As Treasurer, managed club finances and led a marketing campaign for the annual friendly competition, resulting in a sold-out 300-person venue.
- As Captain, coordinated 3 of the club's top teams in the weekly matches, promoting teamwork and showcasing leadership. Achieved promotion for all three teams in the league.

### Coordinator Feb 2022 – Jul 2022

Informatics Tutoring Scheme

- Led a diverse team of 13 tutors supporting 30+ students, receiving the Edinburgh Award for leadership and community contributions.

### Mathematics Tutor Nov 2021 – May 2022

Informatics Tutoring Scheme

- Delivered 30+ hours of personalised Mathematics tuition to a group of 5 pupils, with all achieving grades of 65%+ on Scottish National Exams.