ANDREI-IOAN BLEAHU

Data Scientist

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PROFILE

MSc Data Science graduate from the University of St Andrews. Proficient in **Python** and **SQL** for efficient data processing and analysis, with solid experience in optimizing code performance. Experienced in building end-to-end ML workflows and deploying solutions. Passionate about quantitative problem solving, Bayesian methods, and high-performance computing. Eager to apply analytical skills to opyimization systems.

EDUCATION

MSc Data Science (Distinction)

University of St Andrews

Sept 2023 – Sept 2025 Remote

- **Dean's List of Exceptional Achievement**, awarded for top academic performance in 2023–2024 and 2024–2025.
- **Dissertation:** Practical Variational Inference for Bayesian Neural Networks. Implemented BNNs from scratch in **Julia**, demonstrating a method to reduce model parameters by up to **90%**, enabling deployment on resource-constrained Edge devices.
- Delivered full **end-to-end ML workflows** using **Scikit-Learn** on real anonymised healthcare datasets in **CS5959**, predicting patient outcomes with high recall. Communicated results via technical reports and dashboards. **module mark: 18.6/20**.
- Designed and tested a distributed system for **wildlife detection** across two virtual machines (Edge and Cloud) in **CS5939**, integrating OpenCV and Yolo. **Grade: 18.5/20**.
- Developed and evaluated a solution for courier assignment in food delivery logistics, combining **ML prediction** with **linear and quadratic programming** methods to minimise delivery times. Defined and solved two LP problems with **PuLP** and two QP problems using **Mystic** across CS5929 and CS5938.
- Processed over 1 million London Fire Brigade incident records using **PySpark**, extracting features for borough-level time series forecasting.

MA Semiotics(Grade:B)

University of Tartu

Sept 2020 – June 2022 Tartu, Estonia

MPhys Physics (Integrated Bachelor's + Master's, Upper Second Class Honours 2:1)

University of Southampton

Oct 2014 – Jun 2019 Southampton, UK

- **Final Year Project:** Analyzed experimental time series data from photon interference to assess the use of hollow-core optical fibres in quantum repeater architectures. **Result: First Class, 71/100**.
- **Dissertation – Quantum Machine Learning:** Compared the theoretical performance of Shor's and Grover's algorithms within the context of early quantum computing architectures. **Result: Upper Second Class, 63/100**.

WORK EXPERIENCE

Data Scientist

Gauss & Neumann

July 2023 – September 2023 Remote

- Queried and analyzed large-scale campaign data using **BigQuery (SQL)** to identify key performance bottlenecks.
- Developed efficient **Python** pipelines automating data cleaning and feature engineering, enabling reproducible and scalable analytics.
- Delivered actionable insights through dashboards and reports, improving forecasting accuracy and budget allocation.

Junior Research Fellow (Computational Imaging)

University of Tartu

August 2022 – July 2023 | Tartu, Estonia

- Applied rigorous mathematical and computational techniques to optimize imaging algorithms, leading to peer-reviewed applications in Optics Express and Results in Physics.
- Implemented and fine-tuned a suite of **Deep Learning models using transfer learning** to improve reconstructed images from raw sensor data, example publication is at this link.
- Co-organized the "Ciphering with CIPHR" Hackathon 2022 : gave a workshop for image processing techniques in MATLAB, graded submissions and mentored bachelors students.

Data Analyst (Project Internship)

University of Tartu

Mar 2022 – May 2022 | Tartu, Estonia

- Cleaned, explored, and visualized admissions data from the University's Student Admissions Office using **Python (Pandas, NumPy, Matplotlib, Seaborn)** to identify trends and opportunities for a new international Philosophy programme targeting fee-paying students.
- Delivered insights through clear, non-technical reports tailored to the Department of Philosophy, and provided evidence-based recommendations for programme design and outreach strategy.

PERSONAL PROJECTS

COVID-19 High-Risk Flag System

Personal Project

- Built an ML model to flag high risk patients already diagnosed with COVID-19. Employed the full end-to-end workflow for cleaning data, engineered features, evaluated model-classes in Scikit-Learn, fine-tuned hyperparameters and applied SMOTE-techniques for addressing class imbalance. After testing many model classes, I selected an MLP model which achieved over 95% recall on the test set. For full details, please see my GitHub repository at this hyperlink.

Forecasting EUR/GBP Exchange Rate

Personal Project

- Developed time series forecasting models (RNNs, (S)ARIMA) to predict EUR/GBP exchange rates, demonstrating expertise in sequential data modeling and quantitative analysis relevant to financial markets.

SKILLS

Languages: Python | Julia | SQL

Tools: Git | Jupyter Notebooks | Docker

Skills:

Statistical Analysis | Numeric Optimization | Linear Programming | Monte Carlo Simulations | Networks | Bayesian Inference | Data Storytelling | User Behavior Analytics | Clickstream Analysis | Business Intelligence

GUIDING PRINCIPLE

"All models are approximations. Essentially, all models are wrong, but some are useful. However, the approximate nature of the model must always be born in mind."

George E.P Box (eminent statistician)