

ANDREI-IOAN BLEAHU

Data Scientist

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Tartu, Estonia

PROFILE

MSc Data Science graduate from the University of St Andrews with a strong foundation in Physics and experience across academia and industry. Skilled in designing end-to-end ML workflows, data preprocessing, model evaluation, and deploying solutions for real-world problems. Proficient in **Python**, **Julia**, and **MATLAB**, with solid **SQL** and experience working with tools like Git, Docker, and Jupyter. Passionate about Bayesian methods, interpretability, and impactful AI applications.

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**.

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 Google & Microsoft Ads campaign data using **BigQuery (SQL)** to uncover underperforming campaigns.
- Built robust data preprocessing pipelines in **Python**, enabling clean and reproducible analytics across marketing platforms.
- Delivered client-facing reports and dashboards that improved ROI forecasting and budget allocation.

Junior Research Fellow (Computational Imaging)

University of Tartu

August 2022 – July 2023

Tartu, Estonia

- Contributed to improved architectures for incoherent holography to improve Signal-to-Noise Ratio. First author for paper published 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

- In this analysis, I focus on predicting the exchange rate between the Euro and the Great Britain Pound based on data provided by the ECB (European Central Bank) with RNN's and (S)ARIMA models.

SKILLS

Languages: Python Julia SQL

Tools: Git Jupyter Notebooks Docker

Skills:

Statistical Analysis

Linear Programming

Monte Carlo Simulations

Networks

Bayesian ML

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)