Alex Kneale

London | alexanderkneale109@gmail.com | +393517276989 | Linkedin | github

Overview

I am a recent MSc Computational Applied Mathematics graduate with a diverse technical skill set. I am always eager to tackle challenging problems and I have a passion for continuous learning and collaboration. I have extensive experience working on Data Science, Software Development and Machine Learning (ML) projects, both in industry and in academia.

Technical Skills

Languages: python, C#, SQL, Julia, Matlab, Javascript, HTML, CSS.
Applications/Frameworks: Git, Power BI, Tableau, Excel.

Experience

Data Analytics/Science Intern — **Remote**
Warmur — January 2025-June 2025

- Assisted on a number of startup projects, where I was able to display my resourcefulness and self-starting ability. My biggest contribution was developing various machine learning models for radiator heat outputs. This project lasted several months, and it required me collecting extensive data and experimenting with different models and error propagation techniques. The project resulted in highly accurate and flexible models, which vastly helped our installers in their heat loss calculations for domestic heating. At the end of the project, I was given the opportunity to pitch the model to a group of installers and heat engineers, and it was well received. Other projects I worked on included researching electric vehicle consumer charging behaviour to effectively model electricity consumption using probabilistic approaches.

AI Residency Programme — **Remote**
Apziva — January 2025-May 2025

- The residency gave me the opportunity to apply my knowledge of AI to industry-focused projects:
    - Modelling customer satisfaction for a logistics and delivery company, to gain business insights and make informed recommendations for areas of improvement. Github repo, Medium article.
    - Developing models for predicting whether an individual is likely to subscribe to a bank term-deposit. Here, we managed to create a model which cut down unnecessary calls (44% of the total), and developed other models which analysed our subscriber base, to make informed recommendations to our callers for types of individuals to target. Github repo.
    - Leveraging Natural Language Processing (NLP) techniques to automate and enhance the candidate filtering process for a Human Resources recruitment agency. Github repo.

Current Projects

Mastering SQL

- After completing IBM's 'Databases and SQL for Data Science with Python' qualification, as well the SQLBolt challenge, I am currently pursuing the SQL 8 Week Challenge.

Education

MSc Computational Applied Mathematics (Distinction) — **Edinburgh, United Kingdom**
The University of Edinburgh — September 2023 – November 2024

- Machine Learning Advanced knowledge of theoretical foundations of machine learning and extensive hands on experience solving data science problems with relevant Python libraries (e.g pytorch, sklearn, tensorflow, keras, JAX, Pandas, Seaborn). Dissertation examined using probabilistic neural networks to model chaotic dynamical systems. Examples of other projects I have worked on include developing a decision tree model for default risk.
- Probability and Statistics Strong theoretical foundation in statistics and probability. Topics I have covered include Bayesian statistics, Poisson processes and Markov chains.
- Algorithm Development Took advanced courses in developing efficient algorithms to solve problems in Data Science, Linear Algebra and Partial Differential Equations.
- Programming Languages Further advanced Python skills and learned MATLAB, JavaScript and Julia.

- Operations Research Skilled at implementing modern optimization methods for linear and non-linear programming problems (e.g. Simplex Method, gradient descent, trust-region methods, etc.).
- Strong interpersonal skills: degree involved many group projects, where I had the opportunity to experience working effectively in a collaborative way on mock industry-level projects. Recently, I worked on a machine learning group project which modelled dementia risk factors using a recent data set funded by the European Union. In this project, we developed a regression model and had to present our findings in the form of a written report and oral presentation to the EU. The project received the top in the class, and we were commended for our ability to express technical material to a lay audience.

BSc (Hons) Physics (First Class) **Edinburgh, United Kingdom**
The University of Edinburgh September 2020 – June 2023

- Recipient of the prestigious Neil Arnott prize for highest degree classification in the year group.
- Specialised in applying computer algorithms to solve problems in physics.
    - Dissertation involved creating computer simulations of particles experiencing Brownian motion, as viewed from under a microscope. Programming was done in Python.

International Baccalaureate Diploma Programme (42/45) **Rome, Italy**
St. Stephen's International School Rome September 2018 – June 2020

- Top 5.5% worldwide, 258 UCAS points equivalent.
- One of 2898 students in an IB year of 75093 students to receive a top grade of 7 in Higher Level Mathematics.

Skills and Certificates

- Languages: fluent in English and Italian, advanced in Spanish, and conversational in German and French.
- Adaptable and open minded: lived in 2 countries, hold 3 citizenships (British, German and Canadian). Open to travelling both domestically and internationally for work.
- Verbal and written communication: excelled in written reports and oral presentations in research methods courses in both degrees. BSc and MSc dissertations were commended for their clarity of writing.
- Organisation and time management: in my degrees and work experience, I had to juggle an extensive number of deadlines, which allowed me to hone my time management and organisation skills.