

Matthaios Markatis

Data Scientist — ML Engineer — Full Stack Developer

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ABOUT ME

BSc Physics graduate from the University of Sheffield with a robust foundation in **computational methods** and **data analysis**. Recently completed the **IBM Data Science** and **IBM AI Engineering Professional Certificates**, demonstrating advanced competencies in **machine learning**, **deep learning architectures**, and **AI system deployment**. Proficient in developing end-to-end **data pipelines**, **predictive models**, and **software solutions** integrating AI capabilities, including an **IoT-based wildfire detection system** with **machine learning predictive analytics** and a **personalized AI image generation mobile app**. Extensive experience in **AI application development**, **cloud integration**, and **full-stack implementation**. Seeking opportunities to drive technological innovation through **data science**, **software engineering**, and **applied AI solutions** in professional environments.

TECHNICAL SKILLS

Programming & Development

- Python (NumPy, Pandas, Scikit-learn, OpenCV)
- JavaScript/TypeScript (React, Node.js, Express)
- SQL/NoSQL (PostgreSQL, MongoDB, Firebase)
- C/C++, Git, CI/CD, REST API development

Machine Learning & AI

- TensorFlow, PyTorch, Keras, scikit-learn ecosystems
- Neural networks (CNN, RNN, Transformers)
- LLM fine-tuning, prompt engineering, GPT models
- Computer vision, NLP, recommendation systems

Data Science & Engineering

- Statistical analysis, hypothesis testing, A/B testing
- ETL pipelines, data preprocessing, feature engineering
- Visualization (Matplotlib, Seaborn, Plotly, Tableau)
- ML model deployment, monitoring, and optimization

Web, Cloud & Tools

- Flask, React, Next.js, Firebase, OAuth
- Cloud services (AWS, GCP fundamentals)
- Docker, Jupyter, IBM Watson Studio, Azure ML
- Mobile app development (Flutter, Dart)

EDUCATION & CERTIFICATIONS

BSc Physics

University of Sheffield
2:1 Classification (Upper Second-Class Honours)

2020 – 2024

Programming & Technical Modules

- Advanced Programming in Python (82%)
- Programming in Python (78%)
- Physical Computing (70%)
- Physics with LabVIEW (70%)

Physics Core Modules

- Physics of Materials (75%)
- Atomic and Laser Physics (69%)
- Particle Physics (67%)
- Physics Research Project (59%)

IBM AI Engineering Professional Certificate

Coursera

August 2024

Comprehensive program covering machine learning, deep learning, and AI engineering with hands-on projects. Deployed a traffic light identification system with 98% accuracy using IBM Watson and TensorFlow.

IBM Data Science Professional Certificate

Coursera

July 2024

Intensive data science program covering the complete workflow from data collection to insights delivery. Developed a SpaceX Falcon landing prediction classifier achieving 80% accuracy through statistical analysis and feature engineering.

PROJECTS

Wildfire Detection System

University of Sheffield Research Project

2024

Developed a real-time fire detection system using ML models (Random Forest, Decision Trees) to analyze environmental data from IoT sensors. Built responsive web dashboard with Flask, SQLite, and Leaflet.js for interactive mapping. Trained on NASA FIRMS data, achieving 86% detection accuracy and 10-minute early warning capability.

AI Personal Image Generation App

Flutter Mobile Application

2024

Created and launched a production-ready Flutter app for personalized AI image generation. Implemented full-stack solution with custom fine-tuning pipeline for FLUX.1 diffusion models via Replicate API. Integrated secure user authentication (OAuth), database management (Firebase), and payment processing (Stripe). Published to Google Play Store with ongoing user adoption.

LinkedIn Job Application Automator

Web Automation Project

2024

Engineered an intelligent automation system using Python and Playwright that handles the entire LinkedIn job application process. Integrated OpenAI API for dynamic cover letter generation, implemented pattern recognition for form detection, and built robust error handling for seamless operation. System capable of submitting 400+ targeted applications daily.

Custom LLM Discord Bot

AI Integration Project

2024

Built versatile Discord bot with locally-hosted LLM integration through OpenAI-compatible API interface. Developed context-aware prompting system, advanced audio processing pipeline with Coqui TTS, and comprehensive server management tools. Gained adoption across 20+ servers after publication to bot marketplace.

Autonomous FPV Drone with Navigation Software

Personal Project

2024

Designed and built a fully autonomous drone with software for GPS waypoint navigation and stabilization. Implemented sensor fusion algorithms for reliable positioning and custom firmware configuration. Achieved autonomous flight capabilities with precise navigation within a 1-2 km range and automated return-to-base functionality.

WORK EXPERIENCE

AI Data Annotator & Reasoning Specialist

Outlier AI

June 2024 – Present

Spearheading data annotation and synthetic task creation for training large language models (LLMs) using Reinforcement Learning from Human Feedback (RLHF). Specialize in annotating and engineering tasks designed to teach models graduate-level mathematics and logical reasoning. Collaborate on fine-tuning initiatives for state-of-the-art reasoning agents with focus on structured task generation, error identification, and model behavior analysis in multi-hop reasoning environments.

Team Leader

Meltdown-Wetherspoons

February 2022 – November 2023

Led operations and staff training in high-volume venues. Optimized workflow processes, improving operational efficiency by 15%. Developed crisis management strategies and provided performance coaching to team members in fast-paced environments.

NHS Shadowing Experience

Sheffield Teaching Hospitals NHS Trust

February 2019 – March 2019

Observed healthcare technology systems and electronic patient records management across various departments. Gained insight into medical data integration, diagnostic imaging workflows, and cross-departmental information systems.