Matthew Pimblott

matthew@pimblott.com | linkedin.com/in/matthew-pimblott

I am a ML Engineer and Software Developer with two years of professional experience working in the science and energy sectors. I have a First-Class degree in Mathematical Sciences from the University of Bath, and I am now seeking a challenging role that offers opportunities for growth.

Technologies & Languages

Languages:	**Python, Java, Typescript**
Technologies:	**Docker, Linux, AWS, SQL, Git, CI/CD, PyTorch & TensorFlow, Angular**
Skills:	**Deep Learning, Agile, Full-Stack Development, Research, Software Design**

Experience

Software Developer (Machine Learning) – Gridimp Ltd.

Aug 2024 – Present

- **ML in Production:** Led the development and ongoing maintenance of a machine learning service monitoring the performance of solar and battery assets, aggregating thousands of site measurements daily. Successfully deployed and integrated with existing product offering, taking overall responsibility for design and delivery.
- **Java Backend Development:** Contributed to the maintenance and development of a RESTful Java API and backend services. Focused on clean, maintainable code, including best practices such as SOLID principles and thorough unit and integration testing. Participated in code reviews, giving and receiving feedback.
- **Python Data Science:** Applied machine learning and statistical modelling using Python libraries including Pandas, NumPy, and scikit-learn to tackle energy demand forecasting and market analysis.
- **Data Access & Integration:** Developed robust pipelines extracting production and third-party data to support analytics and reporting, including writing SQL queries to provide tailored datasets on request.
- **Cloud ML Infrastructure:** Provisioned cloud resources, including an MLFlow server on EC2 and model training pipelines using AWS Fargate serverless. Configured container registry and CI/CD integration for automated deployments. Updated documentation and demonstrated infrastructure as code practices using Terraform.
- **Agile Methodologies:** Collaborated in a multi-disciplinary Agile team delivering value through iterative development. Attended standups, sprint estimation, and engaged in planning and review sessions.
- **Deep Reinforcement Learning:** Researched and prototyped a novel battery control algorithm and ported the existing TensorFlow codebase to PyTorch to improve maintainability. Refined and benchmarked simulated environments against real-world data.

Placement Research Software Engineer – Diamond Light Source Ltd.

2022 – 2023

I delivered two year-long projects in parallel while providing support and training to researchers, with a focus on deep learning for image processing, particularly semantic segmentation. A key part of my work was cross-discipline collaboration, helping colleagues utilise deep learning image analysis tools.

- **User Support:** Delivered weekly training workshops for researchers, including personalised data analysis training. Gathered feedback to inform development goals and drive iterative improvement.
- **Full-stack Python development:** Delivered an application with a UI enabling researchers to visualise their data throughout the model training process. Implemented using FastAPI and VueJS and featuring a REST API and WebSocket communication. Containerised using Docker and deployed to Linux lab machines.

- **Research:** Led an independent project on using synthetic data generation to accelerate the training of computer vision models, including literature review, experimental design, and implementation. Produced regular reports to communicate progress to supervisors and contributed to a peer-reviewed publication.
- **Communication.** Liaised with colleagues across research disciplines to assist with integrating ML pipelines into their workflows. This included providing general consultation and creating bespoke solutions tailored to specific research needs. I scheduled regular catchups and prepared training materials and demonstrations.
- **Computer Vision**: Implemented deep neural networks in PyTorch and performed multi-GPU distributed training using HPC resources (SLURM & Grid Engine). Exploited transfer learning to reduce model training times and compute usage when processing multi-terabyte datasets.
- **Kubernetes & Docker:** Deployed and maintained project infrastructure on Kubernetes, including GitLab runners and an MLFlow server.
- **Version Control:** Maintained project GitLab repository, including CI/CD pipelines for testing and deployment, and internal documentation.
- **Project Planning:** Worked closely with product owners including lab principles to ascertain key requirements and convert these into development priorities.

Education

University of Bath: BSc. Hons. Mathematical Sciences **(First Class)** *2020-2024*

My degree covered core mathematics content including Statistics, Applied and Pure Mathematics. Additional modules from Computer Science and Physics give me a broad foundation. Examples include Functional Programming (87%), Data Science (76%) and Simulation Techniques (90%).

The Blue School: 4 A-Levels grade A*/A

Publications

I advised on Deep-Learning Semantic Segmentation for the following work:

J. Le Houx, N. Melzack, A. James, H. Dehyle, N. Aslani, M. Pimblott, S. Ahmed and R. G. A. Wills, "The Aqueous Aluminium-Ion Battery: Optimising the Electrode Compression Ratio through Image-Based Modelling," ECS Meeting Abstracts, Vols. MA2024-01, p. 2579, 2024.

Personal Projects

I have completed several hobby projects, recently building a basic 3D rendering engine from scratch in C++ and an Arduino smart display. I have built web applications using React and NextJS. I learnt programming early as a child through game development and enjoyed working on personal websites.

References

Dr Sharif Ahmed
Principal Beamline Scientist (DIAD)
Diamond Light Source Ltd.

Dr Oliver King
Senior Research Software Engineer
University of Oxford

Contact Details Upon Request.