Theo Windebank

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Education

The University of Oxford — *St. Catherine's College*

MEng Engineering Science - 2.i., (68) — *Sep. 2013 - Jun. 2017*

- Awarded the Gibb's prize for best third year team project. Designed hardware, a distributed computing facility, and set of computational processes that make it possible to scan, process, upload, and save an entire human brain for possible future reanimation. This fine-tuned my team working skills and broadened my data analysis skill-set.
- Co-authored a paper relating to the findings of my fourth year project, 'Mosquito Detection with Neural Networks: The Buzz of Deep Learning'.
- Key Modules: Machine Vision & Robotics · Machine Learning · Medical Imaging & Informatics · Probability, Systems & Perturbation Methods · Nonlinear & Predictive Control · Software Engineering · Information Engineering · Biomedical Modelling & Monitoring.

Experience

Monzo Bank — *London, UK*

Data Engineer — *Apr. 2019 - Current*

- In my first three months, I helped roll out dbt (data build tool) across the company. I designed and built supporting infrastructure and wrote the onboarding docs introducing the new ways of working, which have been highly praised and used by over 100 people at Monzo. As a result of my technical and communications work, I was identified as a high performer and promoted at the end of my probation period.
- To ensure the dbt roll-out was successful, I extended the tooling with a focus on user-friendliness. For example, I created a development shell for data scientists to use which is run under-the-hood in a container, with automatic updates and a heads-up display of information relevant for data modelling work.
- Code I have written helps tens of people develop on and deploy the same data models daily, with the reliability increasing thanks to rigorous CI/CD checks as well as a strong embedded data testing culture that I have helped cultivate.
- As tech lead, I designed and led the development of the system now in place for access control to sensitive data. The distributed system, written in Go, is able to automatically approve or deny access requests, and allows people to securely access to the data they need within minutes.
- At Monzo, I've broken my fair share of things. In doing so, I immediately assign myself as the incident lead and take ownership in finding a resolution; co-ordinating others and communicating to the wider company until the incident is resolved.
- Working at Monzo has given me an understanding of how to develop software and platforms in a way that can support rapidly growing data teams and volume of data, enabling people to perform at exceptional levels.

The BBC — *London, UK*

Data Engineer — *Nov. 2017 - Apr. 2019*

- Having joined BBC Datalab in its early formation, I worked with the team to develop organisation-wide information sharing and federation systems, using structured data, semantics, and machine learning.
- As an experimental team, we worked with technologies and platforms new to the BBC - discovering how best technologies and platforms such as Google Cloud, Kubernetes, and Docker, could maximise value for the audiences.
- Cross-functionality in the team had me deep diving into many areas, such as provisioning and managing our Kubernetes clusters using Terraform, implementing vector similarity scoring for our collaborative filtering model in Elasticsearch, developing and adding features to an API supporting a live app, and writing a library for distributed logging and tracing across our microservices.
- I talked at PyData London 2018 about technologies the team worked with. This proved an invaluable experience, which, among other things, emphasised the importance of the communities that surround the open source tools we use daily. In addition, I worked on communications for the team, determining how we best disseminate knowledge to the wider BBC.

Cue Sense Ltd. — *London, UK*

Software Engineer — *Jun. 2017 - Nov. 2017*

- Built software designed to help visually impaired people in interpreting non-verbal cues, utilising computer vision and machine learning.
- Constructed the entire image processing, image classification, and sound feedback pipeline for the software prototype, using Python 3 and a multitude of ML-based techniques. This built upon my experience of creating unique machine learning pipelines for novel applications.
- Designed around challenging physical and economical constraints, helping expand my knowledge and practical experience in designing software architecture and core algorithms for market-facing products.
- Pitched the product to investors, heightening my awareness and understanding of the marketing and business aspects to developing an innovative product.

Machine Learning Research Group — *University of Oxford*

Software Developer Intern — *Jul. 2016 - Sep. 2016*

- Used a variety of machine learning techniques during my internship within the Oxford-Man Institute of Quantitative Finance, working on a project to detect mosquito presence, species, and gender from audio recordings.
- Developed a fully-featured python package to act as a test-bed for detection algorithms, aimed for a public open source release. This has improved my skills in coding for a long-term project where the code will be further used and worked on by others.
- Planned and carried out a series of microphone tests, resulting in a large batch of microphones being purchased and used to capture further biological recordings.
- Built upon this work within my fourth year university project, receiving a mark of 83 on final grading.
- Feedback from supervisors placed me in the top 5% of students who have worked with the Oxford-Man institute, confirming my ability to carry out high value work in the ML research space.

Skills

- Python · dbt · Airflow · Machine Learning · Go · Kubernetes · Google Cloud Platform · Systems Design · Microservices · gRPC · Semantic Web · Resource Description Framework (RDF) · API Development · SPARQL · ElasticSearch · Conference Speaking · Web Development