Theo Windebank

Notting Hill, London

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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 has 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.

Queen Elizabeth High School   *Hexham, UK*

- *A-Levels:* **A*** Maths · **A*** Further Maths · **A*** Physics · **A** Product Design · **A** Extended Project   *Sep. 2008 - Jun. 2013*
- *GCSEs:* **6A***s · **5A**s

Experience

The BBC   *London, UK*

Data Engineer   *Nov. 2017 - Current*

- Having joined BBC Datalab in its early formation, I have worked along side the team to develop organisation-wide information sharing and federation systems, using structured data, semantics, and machine learning.
- As an 'experimental' team, we have been working with technologies and platforms new to the BBC - discovering how best technologies such as Kubernetes, Docker, and Istio can be employed on Google Cloud Platform to maximise the value for our audiences.
- Cross-functionality in the team has me deep diving into many areas of work, 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.
- Beyond coding, I have talked at PyData London 2018 about technologies the team are working with. This proved an invaluable experience, which, among other things, emphasised to me the importance of the communities that surround the open source tools we use daily. In addition, I work with a colleague on communications for the team, determining how we best share knowledge to the wider BBC and our audiences.

Cue Sense Ltd.   *London, UK*

Software Engineer   *Jun. 2017 - Nov. 2017*

- Built a code base to help visually impaired people to interpret 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 3.6 and a multitude of advanced data science 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 potential 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, recieving 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 this sector.

Communications, Sensors, Signal and Information Processing Research Group   *Newcastle University, UK*

Research Assistant   *Jul. 2105 - Sep. 2015*

- Internship working on various sonar systems to image undersea objects beneath the seabed.
- Implemented a variety of processing techniques in MATLAB including delay-sum beam-forming, synthetic aperture focusing and signal filtering. Challenging problems encountered during the project enhanced my problem solving and research skills.

Skills

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