Patrick Tesh

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Education

University of Edinburgh — **Edinburgh**
MSc Artificial Intelligence — *2016–2017*

University of Oxford — **Oxford**
MMath Mathematics (2:1) — *2011–2015*

University College School — **London**
A–levels: *Maths (A*), Further Maths (A*), Physics (A*), Chemistry (A).* — *1998–2010*
GCSEs: 10 A*s inc. Maths and English.

Experience

BMLL Technologies — **London**
Data Scientist — *September 2015 – August 2016*
Fintech start-up creating a platform for buying and selling financial trading data. I implemented algorithms for parsing and normalising raw trade data from exchanges, and for rebuilding the Limit Order Book. I helped build back-end systems for ingesting and manipulating large volumes of data, using Python, AWS and PostgreSQL. I also worked on developing a pricing model for valuing the platform's data, written in MATLAB. I produced technical, academic-style reports using LaTeX detailing my models and met with financial exchanges and platform partners to communicate our work.

St Catherine's College JCR — **Oxford**
Treasurer — *June 2013–June 2014*
I was responsible for managing the accounts of the college's student union. I liaised with the college administration on financial matters affecting students, such as annual rent changes and the cost of college facilities. I worked effectively as part of the JCR committee to reach decisions on sometimes controversial issues. I also gained experience chairing student body meetings, managing the discussion of, and voting on, student-proposed motions.

QED Analytics — **London**
Researcher — *July 2013–September 2013*
I worked with several other students on a research project developing tools for machine facial recognition, as part of a broad biometric identification package to complement a previously developed iris scanning system. I developed my knowledge of MATLAB as well as an appreciation of elementary machine learning techniques. I also compiled a detailed report of our results.

Berida Wool Company — **NSW Australia**
Farmhand — *February 2011–May 2011*

I spent three months during the lambing season on a sheep station in New South Wales, Australia. I worked as the junior member in a team of three on a 3,500 acre farm running 2000 sheep and 200 cattle. This involved dealing with lambing, planting next year's crops, building a new woolshed, renovating farm buildings and working on farm machinery. I learned organisation and teamwork, as well as land management and maintenance.

Professional Skills

Programming: I have used Python (inc. the SciPy stack), MATLAB and LaTeX professionally. I am comfortable working in a Linux environment and with using BASH scripting for automating my workflows. I have used Tensorflow, Kaldi, Chainer, and NLTK for machine learning and speech/language processing projects in my academic work. I have amateur experience using Java in personal projects developing simple Android applications. I have some entry-level understanding of web development with Python.

Software Development: I have experience working in an Agile environment using SCRUM and with continuous delivery. I have used tools such as JIRA, Git, Jenkins and Docker to plan, build, test and deploy software. I have experience with cloud computing using Amazon Web Services, using the Python *boto3* library to manipulate large datasets. I have worked with databases using PostgreSQL and Python's *sqlalchemy*.

Academic: At undergraduate level interests were focused on probability theory and statistics. In my final year, I studied subjects including Optimization, Machine Learning, MCMC simulation and Numerical Analysis. I also wrote a dissertation on deep learning applications to natural language inference tasks, which received a first class grade. I have just completed an MSc in Artificial Intelligence, in which I further pursued my interests in machine learning and NLP. I achieved a distinction grade in the taught component of the degree, which included courses in Machine Translation, Natural Language Understanding and Speech Recognition. For my final project, I experimented with novel waveform-based (i.e signal-processing free) deep acoustic models, investigating their use for speech recognition.

Other Interests

Music: I play the trumpet and the bass guitar. At university I played in a student jazz band, which put on regular concerts as well as playing for parties and events around Oxford. I also played in a band in high school in which we rehearsed several hours every week, wrote our own music, and performed in pubs and clubs around North London. I learned to work closely in a creative team and to present to an audience with confidence and style.

Sport: I played hockey for my school's 1st XI, and played regularly at collegiate level at university and for my local hockey club. I also enjoy rowing, climbing, running and endurance sports. I was a member of the Oxford University Mountaineering Club and took part in an ultra-marathon across the Peak District.