Alexander McFarlane

CONTACT INFORMATION

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BACKGROUND

- MCMC for high dimensional problems e.g. Lattice QFT / Deep Learning
- Deep Learning research: Stochastic focus (weather)
- Development of simple quantitative strategies: `Zorro Trader`, `PyAlgoTrade`
- M.Sc. in Theoretical Physics (HEP focus e.g. Symmetries / QFT)
- Strong `Python`: ∼100 answers; Contributions to `pandas`, `PyAlgoTrade`

PROFESSIONAL EXPERIENCE

Nomura International, Risk Methodology Group, London UK
Quantitative Analyst (Associate) Nov. 2016 - Present

- Methodology and development for FRTB curvature risk prototype
- Current focus on path dependent derivatives e.g. Algorithmic Indices, Variable Annuity
- Maximising efficiency of exotic Monte Carlo valuations
- Engaging with both front and back office quants in ad-hoc `python` work
- Daily user: `Python` (pandas, numpy), `git`, `SVN`
- Casual user: `SQL`

Webranz & **Fonterra**, Global Dairy Intelligence, Auckland NZ
Quant. Data Architect & Consultant (gap year) Oct. 2014 - Aug. 2015

- Lead of quantitative solutions in data acquisition for data science & modelling
- Researched / implemented twitter prototype for Fonterra Insights (quant) team
- Daily user: `Python` (web-scraping, analysis, research)
- Casual user: `SQL`, `regex`, `bash`, `PowerShell`, `Alteryx`, `Tableau`, `Neo4j`, `Bloomberg`

Commerzbank AG, Models & Calibration EMC, London UK
Junior Quantitative Analyst (off-cycle internship) Feb. 2014 - Aug. 2014

- Validating the structure of exotic trades e.g. Volatility Indices

EDUCATION

The University of Edinburgh, M.Sc. Theoretical Physics, *Expected Merit* 2015 - Present
Dissertation: Generalised Hybrid Monte Carlo - `Python` - supervised by model authors

The University of Surrey, B.Sc. Hons. Physics with Finance, *2:1* 2009 - 2013
Dissertation: Modelling Value at Risk (VaR) - `Fortran` - original implementation

PROJECTS

The University of Auckland, Stochastic Estimation & Robotics Lab 2014
Research Programmer: Deep Neural Networks - `python-theano`

Unsupervised, Quantitative strategies development 2017-Present

- Fundamentals of Algorithmic Trading online course - `C-Lite`, `ZorroTrader`
- Parallel implementation of strategies in `Python` for backtesting comparison - `pyAlgoTrade`

EXTRA CURRICULA

Institute of Physics *Member (MInstP)* 2014 - Present
Institute of Mathematics *Associate Member (AMIMA)* 2014 - Present
Surrey University Snowsports *Snowboard Captain (Awarded Full Colours)* 2012 - 2013
Surrey University Snowsports *Social Secretary ("Investors in Club" Award)* 2010 - 2011

Referees Available on Request