Christopher Morgan

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Employment

Solo Capital Partners, London

- Quantitative Developer, April 2014 - Present
  - Polyglot development with Java, Python and Clojure.
  - Development of front office equity trade flow platform (AWS CloudFormation stack).
  - Deployment and monitoring of architecture.
  - Design of Bloomberg backed data service.
  - Audit of existing Risk analysis tools.

Millennium Global Asset Management, St. James's Street, London

- Quantitative Developer / Analyst, September 2013 - April 2014
  - Maintenance and development of forex G10 systematic trading model and portfolio optimisation (Python (Linux and Windows client), Pandas and MATLAB).
  - Design of replacement infrastructure for model v2 (Python and Pandas).
  - Contribution to quantitative team research (Python and MATLAB).

Red Deer Ltd. (Marble Bar Asset Management), St. James's Square, London

- Senior Software Engineer, April 2013 - August 2013
  - Development and architectural design of Python based equity trading research / intelligence web-application (AWS stack).
    - Defining features through through consultation with fund managers (long/short and long only).
    - Market data (Thomson Reuters QA Direct) manipulation and processing.
    - Development of "real-time" factor calculation module (NumPy/Pandas).
    - Evangelised best practices for Python software development, Jenkins CI, virtualenv, nosetests, pep8 aherence and self documenting code through Sphinx.

Bleep Ltd., London

- Lead Software Engineer, September 2012 - March 2013
  - Responsible for internal and external development of e-commerce platform.
    - Development of e-commerce features, e.g. Persistent Cart, Recommendation Engine.
    - Implemented development best practices e.g. code review (Gerrit), continuous integration (Jenkins).
    - Specification and code-review (Gerrit) of external contractors deliverables.
  - Responsible for operation of e-commerce platform and associated technologies.
    - Streamlined deployment process through use of tools such as Fabric and Supervisor.
    - Operational tasks eliminated or improved through code.
  - Actioned infrastructure review which led to significant cost-savings.
  - Implemented business dashboard displaying metrics related to business and technology performance.

Zugo Ltd., London

- Lead Software Engineer, July 2010 - August 2012
  - Delivered business intelligence solution.
    - Collection of tracking data over HTTP. MongoDB used as transient storage, Tornado as async-webserver.
    - Persistent storage of data in Map Reduce (MR) cluster (Disco Project - Eralng and Python).
    - Sampling and statistical analysis (machine learning) of large distributed data sets.
    - SQL storage of MR job output.
  - Designed and implemented social search product
  - Managed small development team with Agile philosophy.
  - Efficient programming through use of modern tools e.g. Git revision control, sand-boxed development environments (Python virtualenv) and clean deployments (Fabric), continuous integration (Jenkins & Nosetest).
  - Helped drive company-wide strategy for testing and automated documentation.

Revector Ltd., London.

- Software Engineer / Analyst, June 2009 - July 2010
  - Development of cloud based service delivery and business analysis system:
    - Python based algorithmic fraud detection system. Rapid tailoring of algorithms to client specific requests.
    - Intelligent control and scheduling of assets. Distributed Python objects accessed and managed through Pyro protocol.
    - Automatic reporting and visualisation of both client facing and operational business data delivered via Django web applications.
    - Implementation of data feed delivery / JSON API system for client and internal use.
  - Gained increased proficiency in Python, NumPy, MySQL and data visualisation techniques. Added to expertise in Linux system administration.

Queen Mary, University of London

- Post Doctoral Research Assistant, Department of Physics, November 2008 - May 2009
  - Electronic Properties of Carbon Nanotube Networks. Analysis of quantum conductance of nanotube networks in terms of network percolation effects and the Landauer formula.

Experience

Econophysica Ltd., London

- Internship: Quantitative Analyst, April 2008 - June 2008
  - Development of multivariate data analysis solution based on principal component analysis (PCA) for determining correlation between input data. The solution was applied to yield curve analysis, but would suit a variety of financial applications. The solution was coded in C++ for integration with existing Econophysica modules. Econophysica provides high frequency algorithmic trading platforms in addition to derivatives pricing and risk evaluation services.

Personal Portfolio

ProfileOwl.com

ProfileOwl is an on-line service which facilitates the monitoring of public linkedIn profiles. The target market is the recruitment sector. The application was developed in my spare time with the following technologies: Python, SQLAlchemy, Tornado and Handlebars.

Weather and Moon - Android Application

Weather and Moon is a simple Android application which displays the weather forecast for a geographical region leveraging the Google Weather API and phone GPS. This was created in order to learn part of the Android SDK. Note: Google removed access to the "secret" weather API that this application consumed, it is therefore no longer on the Google Play store. Source code available on request.

Education

- Ph.D. Physics (Thesis Title: "Gas sensing with carbon nanotube networks"), November 2008
  National Physical Laboratory (CASE award) & Queen Mary, University of London, UK.
  - Analysis and interpretation of experimental data in terms of statistical physical process, e.g. variable range hopping charge transport and super and sub-diffusive time evolution of analyte spatial concentration.
  - Development of C++ and Visual Basic code to automate experimental data acquisition (magneto-resistance of carbon nanotube networks).
  - Data manipulation, processing and visualisation through custom Python modules.
  - Communication of scientific research to both non-technical (e.g. presentation at the House of Commons) and technical (e.g. presentation at the Institute of Physics) persons through both verbal and visual presentations.
- MSc Photonics, September 2004
  The University of St Andrews / Heriot Watt University, Fife, Scotland, UK.
  - Modelling of laser dynamics with MathCAD software.
  - Primary researcher in new business area during industrial project at Laser Support Services Ltd., Scotland.
- B.Sc. (Hons), Physics, 2nd Class, June 2003
  The University of Edinburgh, Scotland, UK
  - Typical Physics and Mathematics modules, including Statistical Physics and Non-linear Partial Differential Equations courses.
  - Scientific programming in C course.
- A-Levels: Physics, Maths, Chemistry, General Studies, June 1998
  Cardinal Newman College, Preston, Lancashire, UK

Skills

- Experienced in team lead role (Zugo experience), comfortable as team member (Revector experience) and as sole driver of project (PhD experience).
- Data analysis and pattern discovery, enhanced through programming skills.
- Excellent communication of complex topics in a commercial and research environment.
- Excellent Linux system administration skills, including cloud based deployments.
- Technical proficiency:

Level of proficiency	*Skill*
High	Python, NumPy, Java, SQL, Linux, Matlab, VBA
Medium	C, C++ , Javascript, Android SDK

- Strong technical writing and grammar skills.

Awards

- NEBS Certificate in Management, 1999
- Microsoft Access Advanced Training Certificate, 1999

Extra Curricular

- Actively trading in UK small capital and alternative investment markets.
- Enjoy applying novel techniques to financial data and publishing research, `http://wachunga.com/2014/02/06/beige_book_sentiment.html`
- Early stages of research project investigating correlation (most likely negatively correlated) of 'chatter' on public investment forums with price of assets being discussed.
- Experimenting with new languages and technologies, recently developed application with Android SDK.

Journal Publications

- C. Morgan *et al.*,Variable range hopping in oxygen-exposed SWNT networks, *physica status solidi (a)*, DOI 10.1002/pssa.200778113.
- D.J. Mowbray, C. Morgan and and K. S. Thygesen, Inuence of O2 and N2 on the conductivity of carbon nanotube networks. *Physical Review B*, 79:195431, 2009.

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