Christopher Morgan

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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.

Employment

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

- Quantitative Developer / Analyst, September 2013 - Present
  - Maintenance and development of systematic trading model (Python 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.
    - 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.
    - Sampling and statistical analysis 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.

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, PostgreSQL, Linux
Medium	C, C++ , Javascript, Matlab, Java, Android SDK, Visual Basic (inc. VBA)

- 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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