Alex Bird

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CURRENT

The Alan Turing Institute, London, UK   Oct 2016 – present

- PhD in Informatics (supervisor: Chris Williams)
  - Subject: Time Series and Applications in Healthcare.
  - Focus: Probabilistic Models, Variational Inference, Neural Networks.
  - Affiliated with Edinburgh University.

Interests

My long-term interests lie in building intelligent systems for better decision making – at present in healthcare – with agnostic and varied interests across machine learning and statistics. My primary research interests are in deterministic approximations in graphical models: mean-field and automatic VI (also SMC). I'm currently working on drug response (time-series) prediction and artifact removal.

ACADEMIC PROJECTS

Miscellaneous Projects (see hyperlinks for more information)

- Topics relating to modelling healthcare data   Dec 2016 – Jan 2017
  - Survey of existing work, Nonlinear optimisation (quasi-Newton), Ethical considerations

- Distributed optimisation of Kernel SVM using Linear Programming.   Jun 2015 – Sep 2015
  - Masters project (UCL) with John Shawe-Taylor.
  - Sparse path to support vector solution using LPBoost scheme.
  - Optimise using only current support vectors and violations. Effective for well separated decision boundaries - further potential if distributed LP solvers improve.

- Packages for MATLAB, R
  - (R) nectr: nonparametric clustering and visualisation for analysts.
  - (MATLAB) dynamicalSystems: linear, nonlinear, control, inference, learning, constraints, missing

INDUSTRY

Tesco Retail Supply Chain   Sep 2015 – Sep 2016

Extended and Multiscale Bayesian Matrix Factorisation (VB) incorporating flexible expert knowledge and hierarchical decomposition. The requirement was a sales based time series decomposition at (day, store, product) level into component drivers: promotions, events, season, weather, …
- Derived and built prototype algorithms.
- Designed system backend with developers.

Walgreens Boots Alliance Customer Analytics   Jan 2012 – Aug 2014

Innovated and automated tools to prototype analytics as a service (AaaS) for retail buyers.
- Abstracted and automated most standard data queries.
- Built customer clustering algorithms and associated visualisations.
- Developed models for cross-shop opportunities based on network analytics.

Capital One Credit Risk Management   Sep 2011 – Dec 2012

C-suite level analytics for changes in portfolio risk exposure, and model governance.

EDUCATION

University College London (UCL), UK

- MSc Computational Statistics and Machine Learning   Sep 2014 – Sep 2015
  - Project supervisor: Prof. John Shawe-Taylor (see projects).
  - Focus: Bayesian Modelling (Gatsby Computational Neuroscience Unit) and Kernels.

University of Nottingham, UK

- BSc Mathematics   Sep 2004 – Jun 2007
  - Focus: Pure mathematics, also linear algebra, probability, combinatorics.