Citizenship: Australian and British https://thomashandscomb.github.io/ Email: Thomas.Handscomb@gmail.com

Curriculum Vitae for Thomas Handscomb

Biography:

Career Data Scientist with a decade of experience delivering actionable and commercially focussed insight to senior business leaders. Expertise across the full spectrum of data science activity, independently, within and leading teams, including: hypotheses formulation from domain knowledge, engineering and combining multiple large data sources, developing the analytics layer including visualisation of modelling output, synthesising results into business actions and clearly articulating these to senior stakeholders

Previous Employment:

Nov 2015 – Current: Lead Data Scientist: Schroders Investment Management, London, UK

Responsibilities:

- Help shape Schroders' Product, Distribution and Pricing strategy and tactical activity through deep analytical, forward looking and actionable insights
- Develop an industry leading data science platform to most effectively deliver into team and wider business priorities
- Line manage junior data scientists to execute on projects and most effectively deliver into these responsibilities

Recent Projects:

- Mutual fund share class classification
    - Designed and built a system to classify mutual fund share classes into client type categories, using forest based and deep learning models overlaid onto Alteryx and SQL server infrastructure
    - Leveraged this to benchmark Schroders share class pricing and inform tactical and strategic pricing activity within the Schroders fund ranges, presented at CXO level
- Product recommender engine
    - Built a fund recommender engine to suggest a client's 'next product to buy' to sales colleagues based on historical fund holdings and transaction activity
    - Developed an RShiny dashboard to facilitate the market basket machine learning recommender algorithm to be run on demand by sales colleagues and optimise distribution activity
    - Collaborated with data engineers to productionise insights into live CRM system (Salesforce). Rolled out to c.1000 colleagues globally
- Fund demand drivers
    - Determined leading indicators of demand for mutual funds from internal and external data sources via a collection of generalized linear models
    - Drivers were uncovered by combining traditional financial data sources with alternative sources from website and media scraping

Nov 2012 – Nov 2015: Analytics Associate: A.T. Kearney Management Consultants, London, UK

Responsibilities:

- Manage and deliver advanced analytical work streams within European and US based client engagements
- Liaise with senior client stakeholders and manage work streams of junior consultants to ensure accurate and timely completion of engagement deliverables
- Prepare and present engagement recommendations to senior client stakeholders, primarily from Director to CXO level

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Delivered Projects:

- Optimising water leak detection
  - Designed and built water leak detection and prediction models for a UK water utility using cluster analysis and multivariate logistic regression techniques. This optimised the search for water leaks by predicting the location of burst underground water pipes
  - This work was recognised by a firm wide innovation award and has since been used by several teams at A.T. Kearney
- B2B electricity contract pricing
  - Developed a series of generalised linear models to predict the contribution margin obtained for B2B electricity contracts of a German electricity utility. This allowed the client to optimise their B2B electricity contract pricing
- Retailer trade spend optimisation
  - Developed a retailer segmentation for a multi-national electronics company using cluster and factor analysis
  - Defined an optimal allocation of retailer trade spend to derive the greatest impact from marketing spend

Jan 2012 – Nov 2012: Pricing Manager: Lloyds Banking Group, London, UK

Responsibilities:

- Lead the price optimisation of the Lloyds Bank retail loans book

Achievements:

- Optimised the interest rate offered to a customer requesting a personal loan resulting in estimated economic improvements of £6.8m PBT annually
  - Built an automated sequence of propensity models to predict the probability of loan purchase at different offered interest rates. This yielded a fully optimised pricing methodology
  - Engaged the marketing, sales and IT teams to implement the methodology, leading a weekly working group
- Developed, led and delivered a customer retention programme yielding an incremental £120k PBT annually
  - Constructed a detailed customer segmentation of loan attrition and built propensity models to predict a customer's likelihood to attrite
  - Engaged marketing and operations functions to implement improvements to outbound mail campaigns

Jan 2010 – Jan 2012: Commercial Analyst: Lloyds Banking Group, London, UK

Responsibilities:

- Produce actionable, bespoke analytics to drive the profitability of the retail loans business

Achievements:

- Built and guided implementation of a prediction model to determine a customer's preferred sales channel and quantified the commercial impact of employing this model. This allowed for the alignment of personal loan prices across multiple sales channels.
- Organised and chaired a monthly analyst forum across the retail business that shares analytical and technical knowledge amongst c.30 analysts and colleagues.

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Feb 2009 – Oct 2009: Analyst: ANZ Bank, Melbourne, Australia

Responsibilities:

- Support the Deposits business with the mining, modelling and statistical analysis of large data sets in order to provide actionable insights

Achievements:

- Developed a customer segment term deposit attrition model using survival analysis techniques. This provided key customer insights to support deposit balance retention

Education:

2005-2009: PhD (Pure mathematics) The University of Melbourne

2001-2004: BSc (Hons 1st class) (Pure and Applied mathematics) The University of Melbourne

Additional Skills/Technologies:

- Advanced experience across a data science toolkit
  - Data engineering:
    - SQL server, Hive, Alteryx (including Alteryx Gallery)
  - Statistical analysis, Machine learning:
    - R (xgboost, randomForest, e1071, caret, arules libraries). Experience with SAS and SPSS
  - Deep learning, NLP, automation, PDF/Web-scraping:
    - Python (pandas, NumPy, scikit-learn, keras, Tensorflow, PyTorch, APScheduler, BeautifulSoup, selenium packages)
  - Visualisation:
    - Interactive Tableau and RShiny dashboards published to Tableau server and RStudio Connect
  - Version control/collaboration:
    - GitHub, GitLab, Fork
- Advanced experience in building cross-validated and train/test based supervised regression and classification and unsupervised classification models, including:
  - Decision trees, Random forests
  - Support Vector and Gradient Boosted machines
  - Deep neural networks (multilayer perceptrons)
  - NLP using Google's BERT pretrained model
  - Linear regression and quantile, ordinal and logistic generalised linear regressions
  - Hierarchical and k-means cluster analysis
  - ARIMA and other time series models
  - Quadratic optimisation
- International project management under extremely challenging deadlines
- Senior client/stakeholder management across multiple geographies

Personal Interests:

- Sport: Long distance running. Former semi-professional football player. Road cycling

Referees:

Available upon request