Jonny Evans

Creating and applying machine learning algorithms to solve real-world problems.

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Theory

- Deep learning
- Reinforcement learning
- Random forests
- Clustering
- Regression
- Bayesian networks
- Statistics
- Optimisation
- Graph theory

Communication

- Presentations
- Academic and technical writing
- Conducting interviews and surveys
- Stakeholder engagement
- Cross-discipline collaboration
- Negotiation
- Leadership

Education

Machine Learning PhD student, Transportation Research Group, University of Southampton, U.K. (July 2016 – Present).
Funded by EPSRC and Siemens Mobility Limited. Experience included:

- Developed machine learning algorithms for road traffic forecasting and incident detection.
- Trialled the algorithms in Siemens' client's Traffic Management Centres. Involved developing a web app that displayed alerts to operators in real-time, which improved their ability to detect incidents.
- Implemented the algorithms within Siemens' software products. This involved pitching, writing successful bids, cross-discipline collaboration, and pair-programming with a lead architect.
- Project lead to £50,000 funding for further research within Siemens. This involved leading two interns and an MSc student.
- PhD featured in University's Re:action magazine (page 13).
- Attended and presented at global academic and industry conferences.
- Interviewed Traffic Management Centre managers and operators on the state of incident detection in the U.K.

BSc Mathematics, University of Birmingham, U.K. (2012-2015).
First class honours. Experience included:

- Final year research project, entitled 'Google's PageRank algorithm', won the Blackburn Prize for highest mark in graduating year group.
- Social Secretary of the University of Birmingham tennis club, which included negotiating the purchase of new tables for the club.

Work Experience

Graduate Consultant in Intelligent Transportation Systems, WS Atkins plc. (September 2015 - June 2016).

- Head of stakeholder engagement for a feasibility study regarding the deployment of 'temporary' electric vehicle (EV) rechargers across the U.K. for Highways England. Tasks included:
  - Conducting interviews.
  - Organising, presenting and debating at meetings with key stakeholders.
  - Case study research (online, by phone and by site visit).

Programming

- Python (3 years)
- C# (1 year)
- MATLAB (1 year)
- Visual Basic (1 year)
- SQL (1 years)
- JavaScript (1 year)
- Git, GitHub (2 years)
- LaTeX (4 years)

Data science libraries

- Scikit-learn (3 years)
- TensorFlow (1 year)
- Keras (1 year)
- NumPy (3 years)
- Pandas (3 years)
- Matplotlib (3 years)

o Co-authored the final report to Highways England, which was subsequently published (see publications section).
- Managed a small team of graduates and apprentices to monitor CCTV cameras for a project that assessed the use of Smart Motorways in the U.K.
- Conducted analysis to find the optimal locations to implement ramp meters in North Carolina, U.S.A., based on safety, traffic and geometry data. Co-authored the final report to the North Carolina Department of Transportation, which recommended the 30 most suitable ramp meter locations for implementation (of 249 candidate locations).
- Collaborated with the Data Science team in a project to build a Visual Basic for Applications (VBA) based Excel model of household recycling across Hampshire, U.K., for Hampshire County Council policy advisors.
- Developed bids for work, which included orchestrating colleagues from many different disciplines of the company.

Intern, Cirrus Logistics Ltd. (June/July 2014).
Tested and developed software that optimised the scheduling of shipping berths.

Publications

- Evans, J., Waterson, B. and Hamilton, A. (2019), 'Forecasting road traffic conditions using a context-based random forest algorithm'. Transportation Planning and Technology.
- Evans, J., Waterson, B. and Hamilton, A. (2019), 'A random forest incident detection algorithm that incorporates contexts'. 15th World Conference on Transport Research, Mumbai, India, 26th-31st May 2019.
- Evans, J., Waterson, B. and Hamilton, A. (2018), 'RoadCast: An algorithm to forecast this year's road traffic'. 97th Annual Meeting of the Transportation Research Board, Washington D.C., U.S.A., 7th-11th January 2018.
- Clarke, M., Muir, A., Evans, J., Kerwick-Chrisp, D. (2016), 'Temporary electric vehicle recharging'. 11th ITS European Congress, Glasgow, Scotland, 6-9th June 2016.

Personal

- Building up a portfolio of data science pet projects on Kaggle and GitHub. Including:
    - A VBA based Excel add-in named SymbolFix, which auto-formats engineering symbols to save engineers time. It is still being used regularly today by ex-colleagues at Atkins.
- Keen follower of Effective Altruism.
- Played table tennis since the age of nine, with a highest ranking of 2nd in England in under 13s. Coached players of various ages and abilities.