

gavin leech

data scientist, software developer

about

London based.

[Email](#)
[Github](#)
[Blog](#)
[LinkedIn](#)

research

[Speaker similarity](#)
[Empirical AI safety](#)
[Aid impact bounds](#)
[Automation & welfare](#)
[On data science](#)
[Maximum wage](#)
[Controversy vs impact](#)
[Formal analogies](#)

programming

Python/SciPy/Spark,
Keras, *nix, C#, Scala,
JS (ES6, node, TS),
PHP, Pig, LaTeX
...Powershell.

metadata

[vs publication bias](#)
[Career JSON](#)
[Microblog](#)

interests

effective altruism, reinforcement learning, failures of human reasoning, failures of human reasoning about human reasoning, statistics as applied philosophy, lists.

experience

- Sep'16 – Now **Data Scientist** AXA Insurance, London
Creating infrastructure, tools and machine learning models (GLMs, GBMs, ANNs) for pricing, medical risk, & image recognition. Also web scraping at scale & managing a TB/day Hadoop pipeline. Tech lead for 4 other 'scientists'.
Buzzwords: Python, Spark, Keras, xgboost, Jupyter, Oozie, Avro, Pytest.
- May – Aug'16 **Frontend Developer** Furo, London
Developed an Angular SPA for a procurement startup. Sole responsibility for the design & implementation of tendering. TS controllers from C# APIs.
Buzzwords: C# 6, Typescript, Angular, VS2015, SQLServer, Bitbucket.
- Oct'15 – Jun'16 **Software Developer** Freetobook, Glasgow
Improved a large legacy accommodation engine: PHP back-end, JS front-end, REST APIs. Sole design of a PCI compliant credit-card storage system.
Buzzwords: PHP (5&7), LAMP, SQL, Laravel, cURL, Gitlab, New Relic.
- Jun – Sep'15 **Graduate Software Developer** Stugo, Glasgow
Jumped into web tech from scratch; writing production code within 2 weeks, deployed to pharmacies worldwide. Worked on a medicine pump manager (C#) & a secure pharmacy record system (nodeJS). 4th employee.
Buzzwords: C#, WPF, node.JS, MEAN, Ractive, Mongo, Vagrant, VMWare.
- Jan – Apr'14 **Assistant Statistician** The Scottish Government, Edinburgh
Deriving & explaining official stats in Education Analytical Services. Worked on the 'Insight' reporting platform, giving teachers hard data & viz on their classes & themselves. Prepped for the national Social Care Survey 2015.
Buzzwords: SAS, SQL, OLAP, PCA, data protection, official statistics.

...

projects

- 2018 **Side effects in Gridworlds** writeup
Original work on the side-effects problem in reinforcement learning. Implemented DQN and MaxEnt IRL in Tensorflow and evaluated their safety properties. Team work for the first RAISE AI Safety Camp.
- 2017 **sesame: SEArch for StAtistical MEthods** work in progress
Decision trees / search engine for which stats you can/should use. Scala.js
- 2017 **The First Computers** deployed here
Tiny app (and a conceptual analysis) to solve a historical question. Uses the Transcrypt Python transpiler - unfortunately.
- 2016 **modernlove** work in progress
A visualiser for sexualities. Python / Django / nose / seaborn
- 2015 **Py2HTK** github here
Wrapper for venerable (creaky) ML library, the Hidden Markov model ToolKit.

education

- 2015 – Now **BSc Mathematics & Statistics** The Open University
For rigour. Analysis, probability theory, functional analysis, linear algebra, ODEs & PDEs, experiment design and RCTs, sampling theory, classical mechanics & field theory, stochastic processes, medical statistics, Bayesian modelling. Part-time during full-time work. 4.33 GPA expected.
- 2014 – 2015 **MSc Software Development** University of Glasgow
For power. Conversion Masters: Java, SQL, HTML/CSS/PHP, MC6800 assembly plus 'patterns, data structures & algorithmics. The psychology of security, law of safety-critical systems, design of UX. Thesis in computational linguistics: 'Hidden Markov Models in the study of accommodation'. 4.33 GPA
- 2008 – 2012 **MA (Hons) Economics with Philosophy** University of Aberdeen
For purpose. Topics covered included formal logic, micro- & macro- economics, rudimentary statistics, health policy, development policy. Received a four-year Alumni Fund scholarship on merit. Dissertation in foreign aid effectiveness: 'Evaluating aid abolitionism'. 3.86 GPA.