

# gavin leech

data science  $\simeq$  code + stats + improvisation

## about

[Email](#)  
[Blog](#)  
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## programming (in production)

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

## interests

open science,  
[self-calibration](#),  
failures of reasoning,  
failures of reasoning  
about reasoning,  
lists.

## projects

### Side effects in Gridworlds (2018)

Teamwork on the side-effects problem in reinforcement learning. Implemented DQN and MaxEnt IRL in Tensorflow, created new environments, and evaluated their safety properties. Written up [here](#), code [here](#), cited [here](#).

### The First Computers (2017)

[Deployed](#). Conceptual analysis to solve a historical question, Transcrypt Python transpiler.

### Py2HTK (2016)

[On github](#). Wrapper for a venerable NLP library. Used in [this research](#).

## education

### PhD in Interactive Artificial Intelligence, 2019 - 2023

*University of Bristol*

First year will be quals and plotting out the research space.

### BSc Mathematics & Statistics, 2013-2019

*The Open University*

First expected. Probability up to diffusion processes, regression up to GLMMs, numerics up to BFGS, linear algebra up to multi-linear, medical stats, RCTs. Part-time during FT work.

## experience

Sep '16 – Now

### Data Scientist

*AXA Insurance, London*

Built dozens of ML models (GLMs, GBMs, deep ANNs) for actuarial pricing, medical risk, & image recognition. Tech lead for 5 scientists & engineers; web scraping at scale; migration from SAS to Hadoop, & then Hadoop to Azure. *Buzzwords*: Python, Spark, Keras, xgboost, Azure, Oozie, Avro, Pytest.

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

### Software Developer

*Stugo, Glasgow*

Jumped into web dev; my code in worldwide production within 2 weeks. Products: a medicine pump device manager & a pharmacy record system. *Buzzwords*: C#, WPF, node.JS, MEAN, Ractive, Mongo, Vagrant, VMWare.

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