gavin leech

AI researcher / technical generalist

g@gleech.org
Site
Scholar
Twitter
Github
LinkedIn

interests

Book reviews,
metascience,
self-calibration,
failures of reasoning,
failures of reasoning
about reasoning,
lists.

experience

2021 – Now	**Founder**	ARB RESEARCH

Researching AI, forecasting, metascience, and cause prioritisation. Clients include Open Philanthropy, Future of Humanity Institute, Mercatus, Alvea.

2021 – Now	**Instructor**	EUROPEAN SUMMER PROGRAM ON RATIONALITY

Designed 4 sessions on personal agency, research skills, speculative astronomy, and cultural literacy at a grand maths / experiential learning camp.

2020 – 2021	**Researcher**	EPIDEMICFORECASTING.ORG

Modelled COVID with Oxford / Imperial / Harvard colleagues. Led on masks. Probabilistic programming, writing, data cleaning, literature reviews.

Buzzwords: PyMC3, MRP (hierarchical Bayes), AWS, Azure, Seaborn

2019 – 2021	**Teaching Assistant**	UNIVERSITY OF BRISTOL

Solo instructor in CS tutorials, training other TAs. Bayesian ML & Algos 2.

Buzzwords: Gaussian processes, Markov Random Fields, Bayesian opt., variational inference, dynamic programming, graph theory, complexity.

2018 – Now	**Technical Reviewer**	AI SAFETY CAMP

Vetting & interviewing for the world's $\sim$1st intro programme to safety research.

2016 – 2019	**Data Scientist**	AXA INSURANCE

Built dozens of ML models (GLMs, GBMs, neural nets) for actuarial pricing, medical risk, & image recognition. Tech lead for 5 scientists & engineers; web scraping at scale; migration from SAS to Hadoop, & Hadoop to Azure.

Buzzwords: Python, Spark, Keras, XGBoost, Tableau, Avro, Pytest, GDPR

2015	**Software Developer**	STUGO

Jumped into web dev; my code deployed worldwide within 2 weeks. Products: a medicine pump device manager & a pharmacy record system.

Buzzwords: C#, WPF, node.JS, MEAN, Ractive, Mongo, Vagrant, VMware

(…)

awards

Emergent Ventures grant for general career support

FTX EA Fellowship visitor.

EA Forum Prize for a model of the best-case government response to COVID.

EA Forum Prize for models of how much AI safety is done indirectly.

publications

Mass mask-wearing reduces COVID-19 transmission (2021), PNAS

Safety Properties of Inductive Logic Programming (2021), SafeAI @ AAAI

How robust are COVID-19 estimates? (2020), spotlight @ NeurIPS

The effectiveness of nonpharmaceutical interventions against COVID-19 (2020), Science

education

PhD Artificial Intelligence, University of Bristol

2024 finish. First year: research Master's (probability, NLP, GOFAI, legal aspects). Second year: COVID modelling projects. EPSRC Centre for Doctoral Training (full-ride PhD).

MSc Software Development, University of Glasgow

82% GPA. Java, SQL, HTML/CSS/PHP, assembly, design patterns, data structures & algos. Thesis: *Hidden Markov Models for Linguistic Accommodation*

BSc Mathematics & Statistics, The Open University

89% GPA. Probability up to diffusion processes, regression to GLMMs, numerics to BFGS, linear algebra to multi-linear, RCTs. Part-time during FT work. Reviewed here.

projects

Reversals in psychology: Collated the replication crisis; writeup at *Nature*.

Side effects in Gridworlds: New environments, DQN, MaxEnt IRL in Tensorflow. cites.

ProlexaPlus: Brought modern language modelling (Flair) into Prolog for some reason.

breadth

Well-received work in epidemiology, philosophy, psychology, economics, ML, linguistics, software. No prior background in psychology, epidemiology, linguistics, logic.

Breadth implies speed: had a <3 month ramp to great publications in epidemiology; also went from no web dev experience to deploying to production in 2 weeks.

judgment

Brier score of 0.16 after a year of fairly hard questions on Predictionbook.
Top forecaster in Nuño Sempere's Value Forecasting Tournament.
Resolution Council member of Parallel Forecast, a short-lived AI prediction market.