gavin leech

AI researcher / technical generalist

g@gleech.org
Site
Scholar
Twitter
Github
LinkedIn

background

machine learning,
epidemiology,
psychology,
philosophy,
software.

interests

getting into things,
metascience,
failures of reasoning,
failures of reasoning
about reasoning,
lists.

experience

2021 – Now   **Founder**   ARB RESEARCH

Leading a research consultancy on AI, forecasting, and scientific questions for clients including Schmidt Futures, Open Philanthropy, Institute for Progress.

2022 – Now   **Research Associate**   ALIGNMENT OF COMPLEX SYSTEMS GROUP

Comms and concepts at a new research group at Charles University Prague. We work on formal theories of neglected problems with AI & other systems.

2021 – Now   **Head of Camp**   EUROPEAN SUMMER PROGRAM ON RATIONALITY

Running experiential education camps for gifted students: hiring, curriculum, teaching, evals. Classes on research skills, cosmology, and cultural literacy.

2022 – 2023   **Strategic Advisor**   MERCATUS CENTER

Led a study of AI economics and immigration for Emergent Ventures and Schmidt Futures. Briefed UK Cabinet Office and Dept of International Trade

2022 – 2023   **Interim Director**   ALERT

Setup & executive search, 'Active Longtermist Emergency Response Team'.

2020 – 2022   **Researcher**   EPIDEMICFORECASTING.ORG

Modelled Covid, resulting in work in Science, NeurIPS, PNAS. Led a major epidemiological study of masks from data collection to journal acceptance.

> `PyMC3, MRP (hierarchical Bayes), SEIR, AWS, Azure, Seaborn`

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

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

> `Gaussian processes, graphical models, Bayes, VI, graph theory`

2016 – 2019   **Data Scientist**   AXA INSURANCE

Actuarial pricing, image recognition, tooling, etc. Tech lead for a team of 5.

> `Python, Spark, Tensorflow, Keras, XGBoost, Tableau, bash, Pig, GDPR`

2015   **Software Developer**   STUGO

Jumped into web dev; code deployed worldwide within weeks. 2nd employee.

2014   **Assistant Statistician**   THE SCOTTISH GOVERNMENT

Ran official statistics & a data viz platform for teachers & govt. `SAS, SQL, PCA`.

awards

- Emergent Ventures grant for general career support
- Top prize, AMoC NLP hackathon, run with the Dutch Serious Crime Unit.
- EA Forum Prizes for models of AI safety and government responses to Covid.
- Scottish Funding Council scholarship (full-ride Master's funding).
- UK Research Innovation Studentship (PhD funding, ~$150k)

publications

- `Replications and Reversals in the Social Sciences` (2023), (forthcoming)
- `Massively parallel reweighted wake-sleep` (2023), UAI
- `Mass mask wearing reduces Covid transmission` (2022), PNAS
- `Safety Properties of Inductive Logic Programming` (2021), SafeAI @ AAAI
- `Reversals in Psychology` (2021), Nature blog
- `Nonpharmaceutical interventions against Covid` (2020), Science
- `How robust are Covid estimates?` (2020), spotlighted at NeurIPS

education

PhD Artificial Intelligence, University of Bristol.

2024 finish. First year: a de facto research Master's. Second: Covid modelling. Third: work in ML safety. Fully funded by the EPSRC.

> `probability theory, causal inference, ANNs, computational logic, RL`

MSc Software Development, University of Glasgow. 82% GPA.

Converting myself to code. Mathematics and psychology of security, law of safety-critical systems, design of UX. Thesis: *Hidden Markov Models for Linguistic Accommodation*.

> `Assembly, Java, SQL, web dev, design patterns, algos`

BSc Mathematics & Statistics, The Open University. 89% GPA (First).

Part time alongside full-time work. Reviewed here. Covered number theory, probability theory, advanced regression, optimisation, numerical analysis, linear algebra, clinical statistics.

> `Mathematica, JAGS, BUGS, wxMaxima, Netlib, Octave, Minitab,` LaTeX