

Edward Goodhugh

edgoodhugh@gmail.com | 07711 581892 | linkedin.com/in/edgoodhugh | London | edgoodhugh.online

PERSONAL SUMMARY

Data scientist with a first-class degree in Mathematics with Economics and over four years building and deploying production analytical systems. Combines deep Bayesian modelling in PyMC with modern MLOps and LLM and agentic engineering. Recently designed and shipped Global IQ: Outcomes, an industry-first Bayesian Marketing Mix Modelling platform for a media owner. Built the full stack around it: automated model-quality gating, MLflow tracking, AWS parallelisation and an MCP-based self-serve AI agent. Owns the whole lifecycle, from model design to deployment, monitoring and stakeholder communication. Now seeking a broad data science role spanning modelling, MLOps and applied AI.

KEY SKILLS

- **Machine Learning & Statistics:** Bayesian inference and probabilistic programming (PyMC, PyTensor, MCMC, NUTS, ADVI); hierarchical models and empirical Bayes; time-series modelling; regularised and constrained regression; model diagnostics (R-hat, ESS, LOO, Pareto-k, posterior predictive checks); time-based cross-validation; and causal and measurement concepts.
- **MLOps & Production:** MLflow for experiment tracking, model-diagnostics logging and a model registry; automated quality gating and convergence checks; model caching; parallelised multi-model training; CI/CD through GitHub; reproducible pipelines.
- **LLM & Agentic AI:** MCP (Model Context Protocol) server development; AI agent design, orchestration and tool use; RAG-style self-serve insight agents; Claude Code; authoring reusable Skills and Markdown instruction files; prompt and context engineering.
- **Programming:** Python (PyMC, pandas, NumPy, SciPy, statsmodels, scikit-learn, Optuna, Matplotlib), SQL, R and Bash.
- **Data Engineering:** Snowflake, dbt, ETL pipelines, feature engineering, time-series alignment, fuzzy matching and entity resolution, API development, and data cleaning and transformation.
- **Cloud & Platforms:** AWS (S3, Lambda, DynamoDB, CloudFront and parallel compute), Git and GitHub, Qlik Sense, Oracle Cloud and Data Warehouse; plus front-end HTML, CSS, JavaScript, Chart.js and React (developing).

WORK EXPERIENCE

Data Planning & Outcomes Analyst, Global Media Group Services

Sep 2025 – Present

Insight & Outcomes team · London (hybrid)

- Designed and shipped Global IQ: Outcomes, an industry-first Bayesian MMM platform in PyMC and the media owner's first, built from first principles rather than an off-the-shelf framework. It serves 45 brands live and is engineered to scale toward around 500, with the outdoor pipeline alone running close to 700 models in parallel across sectors, at 18 metrics per brand.
- Built end-to-end MLOps around it. A local MLflow server tracks model diagnostics and experiment runs, with a backfill script logging history to SQLite. An automated convergence gate (R-hat, divergences, ESS and R^2) and a four-axis quality score lifted the pass rate from around 63% to between 96% and 99%.
- Engineered advanced Bayesian components: Weibull adstock and Hill saturation estimated in-model, empirical-Bayes warm-start caching, adaptive AR and spline priors, Fourier seasonality, and Student-t and logit-normal likelihoods. I made the priors variable and empirical, learned from each brand's data and pooled across brands, letting the framework scale across 45+ brands without re-tuning each one.

- Created an MCP (Model Context Protocol) server connected to the company's internal AI tool, delivering a conversational self-serve agent over model results. Authored reusable Skills and Markdown instruction files, plus custom agents, in Claude Code.
- Built three tiered Chart.js dashboards (a category view for all sales teams, a client view, and a master deep-dive), used across the sales organisation.
- Co-presented the project's outcomes to media agency audiences as part of a two-person team, communicating technical results to non-technical stakeholders.
- Mentored an intern, led an internal AI-agents ideation session, and ran stakeholder training.
- Automated Snowflake pipelines and built multi-stage fuzzy brand-name matching and entity resolution, aligning 500+ brands to a standardised category taxonomy of around 19 categories, with CI/CD through GitHub and AWS parallelisation for scale.

Career Break, Travel and professional development

Mar 2025 – Aug 2025

- Planned break travelling through Japan and Southeast Asia, alongside self-directed study in AWS and Bayesian methods.

Pricing Analyst, BMW Financial Services

Feb 2023 – Mar 2025

- Built automated self-service dashboards covering 130+ BMW retailers, cutting the team's reporting time by around four hours a week.
- Designed normalised data models in Qlik Sense over five or more relational databases, and wrote SQL against an Oracle data warehouse (ETL and geo-spatial data).
- Chaired stakeholder meetings and led the Qlik Sense training initiative, onboarding five new analysts.

Proactive Performance Analyst, Southern Water

Oct 2021 – Oct 2022

- Developed predictive models to identify high-risk pollution sites. Drove automation with Alteryx to lift operational productivity.

PERSONAL PROJECTS

- Built an F1 race-prediction MCP server (using the Jolpica API) as an agentic-AI skill-building project.
- Designed and deployed a personal website on AWS (S3, CloudFront, Lambda and DynamoDB), built in HTML, CSS and JavaScript. It runs a serverless API over a NoSQL store, hosted at edgoodhugh.online.

EDUCATION

BSc Mathematics with Economics, First-Class Honours, University of Sussex

2018 – 2021

Key modules included Linear Statistical Models, Dynamical Systems, Numerical Analysis, Financial Mathematics, and Coding Theory & Cryptography, with extensive statistical modelling and hypothesis testing in R.

CERTIFICATIONS & INTERESTS

- **Certifications:** AWS Certified Cloud Practitioner; Qlik Sense Data Architect; Qlik Sense Business Analyst; IBM Introduction to Data Science; Lean Awareness.
- **Interests:** Grade 8 saxophonist (ABRSM, 15 years), competitive chess and sport.