Emilian Joseph Bowry

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Education

Trinity College, University of Cambridge
BA, Engineering Tripos, 2020-2025

Judge Business School, University of Cambridge
Accelerate Cambridge, August 2022-July 2023

Experience

Software Developer AI Compatible
Remote August 2025 - Current

- **Regulatory Analysis Engine:**
  - Refined Hader et al.'s [DOI: 10.1007/s00607-024-01331-9] methodology to create a generative, automated process for the efficient extraction of more nuanced insights from privacy policies.
  - Unsupervised semantic equivalence detection model utilises Bayesian inference, topology, linear algebra, NLP techniques and non-linear systems analysis. Part of my system derived an analog for RkCNN, a recently published technique for the classification of high-dimensional data.
- **Redeveloping full-stack website:**
  - Derived a coordinate transformation system to map non-orthogonal lattices onto Cartesian grids.
  - Utilised Dimensional Analysis to achieve area-invariant scaling across all aspect ratios.
  - Modelled layout states as elements of the p2mg wallpaper group to enable layout transformations for dynamic content with undefined lengths.
  - Implemented an SVG-to-Bitmap rasterizer to render complex tessellations efficiently.
  - Created a perturbation-based convergence algorithm to resolve oscillations caused by circular dependencies between content and container size.
  - Engineered a compile-time validation engine using TypeScript's type system to enforce strict schema correctness without runtime overhead.
  - Engineered an ISO 32000 PDF generator: that maps JSON data structures into a PDF.

Co-founder Luucid.tech
Cambridge August 2022 - October 2023

- Created novel electrochemical and material mechanisms for detecting spiking agents in beverages.
- Determined product-market fit and commercial viability of scientific research.
- Sponsored by University of Cambridge's startup incubator.

Software Development and Business Intern Atomic Media
Nottingham April 2022 - August 2022

- Built an anomaly detection system to infer potential theft from fleet fuel logs.
- Led skill days, which taught developers the low-level networking implementations of the tools they use: https://github.com/emilbowry/NetworkProgrammingLesson
- Organised the weekly cyber-security brief about emerging threats and vulnerabilities.

Projects and Additional Experience

Plotting Tools: Extension of the Python Plotly library to make 4+ dimensional correlations intuitive to visualise, using metaprogramming techniques to create a robust and adaptable framework.

Code Editor: A fork of Microsoft VSCode that:

- Improves supply chain security by removing telemetry "at the source".
- Removes LLM, MCP and agentic AI integrations and bloat.
- Adds new features, like a persistent homepage, and cross-codebase note-taking system.

AST Debug Logger: A debugging tool that intercepts Python code before execution to toggle any 'debug' flags, even from orphans and disconnected nested code. It also intercepts and saves logs.

Phasor Average Estimator: A non-parametric, Recursive Bayesian Estimator that modelled event streams as a superposition of phasors, enabling zero-lag estimation. It allows us to:

- Filter noise and jitter, via phase interference without requiring evidence accumulation windows.
- Derive future event probabilities via phase coherence.
- Eliminate arbitrary exogenous hyperparameters via these natural geometric bounds.

Neural Data Analysis: Built a simulation framework for Lateral Intraparietal Cortex (LIP) neuron impulses, in order to analyse stochastic models. The core objective was to evaluate statistical models for varying simulation parameters. The framework included:

- Modelled neuron impulse with Stochastic Differential Equations (SDEs), and HMM approximations.
- Used Bayesian Inference for parameter estimation and model mismatch and brittleness quantification.
- Engineered a custom Extract, Transform, Load (ETL) framework to standardise heterogeneous scientific data formats, enabling centralized statistical analysis (e.g., Fano-Factor, PSTH) from legacy lab methods.

iCloud Find My messaging service: A system to piggyback on Apple's "Find my iPhone" API to remotely communicate between devices without knowledge of any identifiers like IP addresses.

Automated Notes Reasoning: A knowledge graph inference engine that:

- Programmatically identified semantic gaps by detecting missing nodes at the intersection of related objects, automatically generating placeholders to maintain graph connectivity.
- Enforced a structural schema that binds grammatical titles to objects, ensuring data integrity without manual tagging.
- Implemented a purely relational classification system where objects are defined solely by their connectivity to other primitives, enabling property inference without content parsing.

Module Type Objects: Built a parallel object system using modules as the core components in Python to allow for more flexible and better controlled attributes. Used to prototype experiments for Kleene's 3-VL with the native Python singletons (True, False and None) and symmetrise or/and short circuiting.

Awards and Achievements

Goldman Sachs: Awarded a scholarship and Engineering Spring week.

Imperial College London: Awarded the President's Scholarship to Imperial College London, given to the top 112 candidates that demonstrated the "highest academic excellence at interview".

Referees available upon request