Emilian Joseph Bowry

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Education

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

Note: Degree awarded unclassified due to medical intermission preventing completion of Part IIB

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

Experience

Software Developer AI Compatible
Remote August 2025 - Current

- **Regulatory Analysis Engine:**
  - Utilises Large Language Models for initial data extraction: Defining the output form using an OpenAPI schema object for consistently returned format for processing.
  - Improving and refining the Hader et al's methodology [DOI: 10.1007/s00607-024-01331-9] for a generative, and automatable process to gain more nuanced insight into privacy policy and reduce the amount of API calls.
  - Unsupervised semantic equivalence detection model utilises Baysian Inference, Topology, Linear Algebra, NLP techniques and Non-linear Systems analysis. Part of my system derived an analog for Random k Conditional Nearest Neighbours, a recently published technique for the classification of high-dimensional data.
- **Redeveloping full-stack website:**
  - **Frontend:**
    - Creating a dynamic background image generator to programmatically generate complex, 'tilable' background textures entirely on the client-side
    - Creating a geometry engine to compose mathematically definable UI styles, including the capability to have seamless non-uniform backgrounds over disconnected, and unconventionally shaped UI components.
    - Generalisng the CSSTypes library to be able to create more complex, type-safe style objects.
    - Simulating a toroidal topology for a scroll-bar to define well ordered cyclical UI wheel elements.
    - Direct style-sheet injection to handle high-performance style changes, by prevent re-rendering by modifying css rules and not the elements.
    - PDF generator that implements the 'ISO 32000' PDF specification to generate PDFs from java objects and/or json
    - Contextual telemetry analysis, creates interaction based profiles utilising site-entry points, device and location data to profile user events.
  - **Backend:**
    - Managing cloud infrastructure, including virtual machines and networking.
    - Devising and prototyping HTTP and API servers from scratch using Rust, to learn the fundamentals

* Managing backend API with express.js, Prisma, PostgreSQL, mongoDB.
* Handling authentication, payment processing and third-party APIs.

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.
- Sponsorship by University of Cambridge's startup incubator.

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

- Built an anomaly detection system that analysis of fuel levels in a vehicle fleet to infer when there may have been an incident of fuel theft.
- Analysed new business opportunities and ventures, writing insight articles.
- Led skill days, which taught developers the low-end networking implementations of the tools they use: https://github.com/emilbowry/NetworkProgrammingLesson
- Organised the weekly cyber-security brief about emerging threats and vulnerabilities.

Published and Open Source Software

Plotting Tools: https://github.com/emilbowry/Plots
https://pypi.org/project/plottingtools-emilbowry

Extension of the python Plotly library to make 4+ dimensional correlations intuitive to the human eye

Code Editor: https://github.com/emilbowry/editor

A fork of Microsoft VSCode that:

- Improves supply chain security by removing telemetry "at the source" rather than just blocking the URL (like alternative's like 'Codium')
- Removes LLM, MCP and agetic AI integrations and bloat.
- Adds new features, like a persistent homepage, and cross-codebase note taking system

AST Debug Logger: https://github.com/emilbowry/AST-Debugger

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 a logs.

Algorithmic Trading resource: https://github.com/emilbowry/algorithmicTrading

A teaching resource that develops and implements knowledge gained in my signals processing, statistics, systems and other engineering courses; research into advanced mathematics to develop examples of: Quantitative Risk Modelling, Alpha Generation and Backtesting Engines

Projects and Additional Experience

Phasor Average Estimator: Developed a scale-invariant, Phasor-based Statistical Model to solve hardware jitter and Inter-Symbol Interference (ISI), in a Molecular

Communication system. It provided zero-lag estimation, unlike moving averages; retained phase information, unlike mixture models; and provided a non-parameteric way to estimate state.

Neural Data Analysis: Built an ETL (Extract, Transform, Load) framework for Lateral Intraparietal Cortex (LIP) neuron impulses, in order to analyse stochastic models The core objective was to evaluate and test different statistical models for varying models.

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 (Side-Channel Analysis).

Automated Notes Reasoning: A system that makes inferences about my course notes. Using techniques derived from Category Theory and reverse-engineering parts of the 'Obsidian Markdown Editor'.

Module Type Objects: Built a parellel object system using modules as the core components in python to allow for more flexible and better controlled attribiutes.

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