# Luke Conibear

laconibear@gmail.com | lukeconibear.com | UK

## Overview

Generalist engineer working across software engineering, data engineering, applied ML/data science, and atmospheric science to build production systems.

## Experience

**Senior Software Engineer, Tomorrow.io | 2022–present**

- Promoted to Senior Software Engineer after 1 year.
- Primary contributor to a department-wide cloud cost optimization program, delivering a 25% spend reduction in 2025 through information-content compression (`xbitinfo`), spot/reserved capacity strategy, KEDA scale-to-zero, rightsizing, lower cross-cloud/cross-region transfer, and stricter data-retention policies.
- Designed, deployed, and maintained 100+ production microservices and data pipelines in Python, Rust, and Go for ML and physics-based forecasting workflows (YouTube).
- Core contributor in Severity-1 incident response; identified recurring failure modes and led preventive fixes that reduced MTTR by 35% from 2024 to 2025.
- Led design and delivery of multi-cloud MLOps infrastructure across Azure ML, AWS SageMaker, and GCP Vertex AI.
- Led refactoring of legacy applications to improve production reliability, maintainability, and operational simplicity.
- Led department-wide adoption of AI-assisted engineering workflows (e.g., Cursor), integrating code review standards, clear documentation, and CI/CD improvements to increase delivery speed and code quality.

**Research Software Engineer Machine Learning, University of Leeds | 2021–2022**

- Taught AI emulators of numerical atmospheric models.
- Authored and maintained an open-source course for High-Performance Python and Machine Learning.

**Research Fellow, University of Leeds | 2018–2021**

- Engineered AI emulators (`scikit-learn`, `tpot`) to act as fast proxies for complex atmospheric simulations (~20 TB of data), distributing training across high-performance compute clusters (`dask`).
- Maintained and supported `WRFotron`, an open-source automation tool for atmospheric modeling, managing GitHub releases, documentation, and a community of users.

## Education

- **PhD**, Ambient Air Quality and Human Health, University of Leeds | 2015–2018
  - Computational modelling & applied data science
- **MSc**, Bioenergy, University of Leeds | 2014–2015
- **BEng**, Mechanical Engineering, University College London | 2007–2010

## Publications

- Lead-author of 9 academic papers (h-index of 18 with 1,400+ citations).

## Tools

- **AI-native:** Cursor, Codex, GitHub Copilot.
- **Languages:** Python (scientific & ML focus), Rust, Go, Bash.
- **Cloud & ML:** Azure (ML, storage), GCP (Vertex AI, GCS), AWS (SageMaker, S3), GPUs.
- **Infra & Ops:** Kubernetes (AKS, GKE), Docker, Terraform, Argo, GitHub Actions.
- **Misc:** Git (GitHub), Jira, DataDog, DoIT, PagerDuty.