

PEARL AYEM

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PROFILE

Working at the intersection of climate science, software, and risk, I write production code for the climate, nature and supply-chain models that FTSE100 boards use to plan their next decade, lead applied AI work in agricultural risk, and have helped design data platforms launched at COP28 by heads of state. Most of my career has been spent moving between technical, scientific, policy and commercial worlds, and it's the kind of work I love most: deeply technical, genuinely useful, silently impactful.

CORE SKILLS

Software Engineering: Python, SQL, C++; Git, CI/CD, Docker, REST APIs, testing
Cloud & Data: Google Cloud (BigQuery), AWS (EC2, S3); Power BI
Applied AI: LangSmith, LangGraph, agentic workflows, Gemini (Vertex AI, NotebookLM); CNNs, PCA, EOFs
Climate Modelling: CMIP5/CMIP6, bias correction, downscaling, RCP, SSP, NGFS scenarios; Scope 1/2/3 accounting
Geospatial: xarray, geopandas, rasterio, GDAL, netCDF/GRIB/HDF5; satellite imagery, Google Earth Engine
Risk & Disclosure: Physical, transition, financial, & supply-chain risk; TPT, CSRD, CSDDD, TNFD, SECR, CDP
Leadership: Team Lead managing modellers, scientists and engineers; product strategy; trusted advisor to C-suite, boards and government stakeholders across Bloomberg, Cambridge, GFANZ, FTSE100 and the UN

WORK EXPERIENCE

Risilience — Lead Environmental Risk Modeller

Mar 2025 to Present

- **Team Lead** for climate and nature risk across some of the world's biggest food, fashion, and entertainment brands, alongside global asset managers, underwriters and FTSE100 clients.
- Lead the planning and build for a full-company digital twin that assesses financial and climate risk due to drought, freeze, heatwave, water stress, agricultural yield and nature depletion.
- Product lead for **supply-chain and agricultural risk** models spanning 65 agricultural crops, fed by CMIP6 ensembles with bias correction, satellite data and academic sources.
- Designing and delivering a **first-of-a-kind water balance model** for use by clients including Nestlé, Mondelez, Primark, Inditex and Barry Callebaut to quantify water stress across global supply chains.
- Lead the company's **applied AI initiatives** in agricultural risk: built agentic workflows with **LangSmith and LangGraph** that cut model release cycles from 8 weeks to 4; trialling **Gemini Enterprise** (Vertex AI, NotebookLM, BigQuery) for internal research and client-facing analytics.
- Write production code that powers digital twins, what-if analyses and bespoke client engagements; partner with Head of Product on roadmap, releases and client feedback.
- Manage a cross-functional team of modellers, economists, data scientists and engineers.

Sillion — Senior Climate Risk Modeller

Dec 2023 to Feb 2025

- Led development of climate risk models for FTSE100 / FTSE250 clients.
- Built systems to quantify **earnings-at-risk** under multiple scenarios.
- Built the firm's **first transition-planning dashboard** combining economic and climate models, supporting client reporting under TPT, CSRD and CSDDD.
- **Product Lead** for an ESG research tool tracking KPIs across 600+ companies; integrated outputs into Power BI, Tableau and Excel workflows.
- Drove business growth and recurring contracts; presented to C-suite, boards and press; mentored junior analysts and consultants.
- Featured by the [British Science Association](#) for my work in STEM and climate.

Bloomberg L.P. (secondment with GFANZ & CDU) — Net-Zero Data Lead

Jun 2022 to Nov 2023

- Led data modelling and engineering for the [Climate Data Utility](#) (formerly NZDPU), a free climate-transition data platform.
- Worked for [GFANZ](#) to build a climate report model with key stakeholders like [Mark Carney](#) (UN Special Envoy in 2021).
- Worked with [Emmanuel Macron](#), the [MPs in Switzerland and Singapore](#), [CDP](#) and [UNFCCC](#), and other [global organisations](#).
- Managed a team of 40 analysts for GFANZ's [data launch](#) at COP27.
- Built ETL pipelines and APIs ingesting data across hundreds of providers.
- Co-authored two reports for [GFANZ](#) and [NZDPU](#) with partners from ISSB and IEA.
- Helped secure the [CDP partnership](#) bringing 10,000+ companies onto the platform; supported the CTO on RFPs, vendor evaluation and contractor management.
- Delivered briefs on ~700 climate KPIs [used in Michael Bloomberg's](#) keynote address for COP27.

University of Cambridge & British Antarctic Survey — Climate Science Researcher *Oct 2021 to Jun 2022*

- [Fully-funded research](#) at the Scott Polar Research Institute on atmospheric drivers of Antarctic surface melt.
- Analysed ~1.7 billion geospatial data points across CMIP5 GCMs, RCMs and in-situ observations.
- Developed a CNN and ran EOF analysis to identify seasonal melt patterns; published findings and presented at conferences.
- Featured on Cambridge's [official channels](#); my work is used as [course material](#) in MPhil-level teaching.

University of British Columbia — Lead Teaching Assistant, Computer Science *Dec 2016 to Jun 2020*

- Managed 18 TAs; ran labs and lectures for ~1,000 students in Python and C++; awarded Best TA three years running.
- Helped pilot a new course; authored modules on climate computing and [contrast stretching](#) on satellite imagery.

University of British Columbia — Research Assistant, Atmospheric Science *Dec 2016 to May 2020*

- Studied glacial katabatic winds and [cloud-street formation](#) over Greenland using MODIS, GOES-16/17 and Landsat 7/8 imagery and ECMWF reanalysis data.
- Built ETL pipelines on AWS EC2/S3; applied PCA, Sobel edge detection, Self-Organizing Maps and CNNs to mesoscale convection problems.
- Conducted eddy-covariance measurements during the Buckley Bay wildfires; tested diffused-radiation fertilization against NASA AOD data (contributed to McKendry et al., 2019).

UAViation Aerial Solutions — Geospatial Engineer *Jul 2018 to Sep 2019*

- Project lead on LiDAR drone mapping and flight-automation app development across BC, Alberta and Yukon; delivered 18 projects in 12 months for government, search-and-rescue, BC Wildfire Services and academia.
- Reported directly to the CEO; my work contributed to a successful exit (acquired by Volatus Aerospace).

EDUCATION

University of Cambridge, MPhil in Polar Studies (Atmospheric Physics) *2021 to 2022*

- **Scott Polar Scholarship:** full scholarship awarded to the top applicant.

University of British Columbia, BSc in Atmospheric Science *2015 to 2020*

- Graduated top of class; Dean's Honour Roll (2017 to 2020).
- Ministry of Education and BC Excellence Scholarships (top 10% nationally).

BOARD APPOINTMENTS

Compassionate Eye Foundation, Board Member, Revenue Generation *Aug 2024 to Feb 2026*

- Board director setting revenue strategy for a global charity delivering UN SDG-aligned grassroots projects; lead on grants, donor relationships and corporate partnerships.

Polar Impact, Co-Organiser & DEI Lead *Oct 2021 to Mar 2023*

- Co-ran an NGO supporting BIPOC professionals in polar research; co-authored grants totalling £50,000 from NSF, UKRI and National Geographic; organised COP26 climate-justice speakers.

SELECTED CERTIFICATIONS

[Data Engineer in Python](#) (DataCamp, 2024)

[Bloomberg Market Concepts](#) (Bloomberg, 2023)

[Corporate Finance Foundations](#) (LinkedIn, 2022)