

Cameron Poole

Data Engineer & Geospatial Software Specialist

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01 / profile

Data Engineer and Geospatial Software Specialist with deep expertise engineering robust spatial data pipelines, cloud infrastructure across AWS and Azure, climate hazard models, and engineering desktop automation. Combines software engineering rigour with advanced remote sensing and open-source geospatial toolsets to deliver scalable, audit-ready data systems.

02 / technical-capabilities

Spatial & Data:	Python, GDAL/OGR, Rasterio, PostGIS, xarray, GeoPandas, Overture / OSM
Remote Sensing:	Sentinel-1/2, Landsat, NASA GEDI, Cloud-Optimised GeoTIFFs (COGs), STAC
Software & Systems:	C# / .NET 8, Autodesk Revit API SDK, Docker, WiX Toolset v5, NUnit / Moq, AGENTS.md
Web & Platforms:	Django, FastAPI, React / Preact, Astro, MapLibre GL, TypeScript
Cloud Infrastructure:	PostgreSQL / PostGIS, AWS (Lambda, SQS, DynamoDB, S3, RDS), Azure, REST APIs, CI/CD

03 / experience

Independent Geospatial Software & Data Consultant

cpoole.dev

2019 – Present · Hobart, TAS

Independent software development and data consulting practice delivering spatial ETL pipelines, workflow automation, and fast web platforms.

- Built fast static web platforms with Astro and TypeScript, adding MapLibre GL and Cloud-Optimised PMTiles where interactive mapping was required.
- Engineered Peritas Portal Frame Builder, an automated structural engineering add-in for Autodesk Revit (.NET 8 / C#) with decoupled geometry calculation engines.
- Governed agentic coding workflows using repository-level specification constraints (AGENTS.md), deterministic test suites, and human review across spatial and web deliverables.
- Engineered an event-driven AWS serverless integration engine (AWS Chalice, SQS, DynamoDB, Lambda) for ALX / African Leadership University, synchronising admissions and CRM automations across Pan-African cohorts.
- Built automated packaging pipelines producing signed, deterministic Windows installers (.msi) using WiX Toolset v5 and PyInstaller for enterprise workstation deployment.

TECH: AWS (Lambda, SQS, DynamoDB) · PostGIS · Python · GDAL · C# / .NET · Astro · Docker

Lead Data Engineer

Geoneon

2023 – 2026 · Hobart, TAS

Led geospatial data engineering, remote-sensing pipelines, and climate risk modelling workflows across Australia and international programs, delivering reproducible analytics for state government and council stakeholders.

- Led data engineering for the published Tasmania Wildfire Index 2026 (450,356 building footprints); delivered separate evacuation exposure analysis for Hobart and Kingborough and wildfire pipelines for Bhutan.
- Integrated bounded agentic coding workflows for geospatial algorithm refactoring and test generation, backed by deterministic GIS unit test validation.
- Developed tree-canopy mapping, temporal change, canopy-height and greening-prioritisation workflows across five Tasmanian councils, with methods varying by project.
- Engineered automated satellite imagery and vegetation classification pipelines for Western Australia (DFES) and NSW bushfire-prone area mapping pilots.
- Engineered building footprint validation pipelines across Overture Maps, OSM, and cadastres, filtering ML false positives for wildfire exposure models.
- Constructed mass-preserving dasymetric population allocation in Laos and validated satellite canopy height models against NASA GEDI spaceborne LiDAR.

TECH: Python · PostGIS · GDAL · Overture / OSM · AWS · Vector Tiles · COG

Geospatial Developer & Consultant

Mammoth Geospatial

2016 – 2023 · Hobart, TAS

Systems architecture, software maintenance, and spatial data engineering with an emphasis on open data and open source mapping solutions for clients including UNDP, Seer Analytics, Agronomeye, and Kaleka.

- Designed and implemented RESTful APIs, ORM data models, and backend services powering web applications and interactive maps, collaborating with frontend developers and project managers.
- Engineered and deployed system infrastructure on AWS, administering containerised applications and CI/CD solutions for international organisations including the UNDP.
- Designed and administered PostgreSQL databases featuring replication, high availability, and indexing, implementing automated testing, QA, and geospatial analysis of client data.

TECH: Python · PostGIS · PostgreSQL · Docker · AWS · REST APIs

Data Engineer & Analyst

Mayor of London — Greater London Authority (GLA)

Jan 2021 – Nov 2021 · London, UK

- Developed automated ETL pipelines ingesting high-volume municipal and demographic datasets published directly to the London Datastore.
- Engineered spatial data infrastructure and analytics for the Cool Spaces application, cataloguing public refuge locations during extreme heat events.

Geospatial Specialist & Spatial Lead

Yamatji Marlpa Aboriginal Corporation (YMAC)

2014 – 2018 · Perth & Hobart, Australia

- Built and maintained a Django spatial portal streamlining data requests, downloads, and document discovery across 12+ years of historical data.
- Authored authoritative court and tribunal cartographic exhibits reconciling complex tenure, pastoral leases, mining tenements, and heritage survey data.

Senior Linkage Officer

Department of Health WA | Data Linkage Branch

2010 – 2014 · Perth, WA

- Executed deterministic and probabilistic record linkage algorithms joining multi-million record longitudinal registries while enforcing strict privacy protocols and cryptographic hashing.

04 / education

Preliminary Masters of Software Engineering (Grad. Dip. Equivalent)

2013 – 2015 · Perth, Australia

University of Western Australia

Relevant units: Data Structures and Algorithms; Object-oriented Programming and Software Engineering; Programming and Systems; Discrete Structures; Introduction to Databases; Computational Modelling; Graphics & Animation.

Bachelor of Health Science (Population & Psychological Studies)

2007 – 2011 · Perth, Australia

University of Western Australia

Relevant units: Health Research Design; Introductory Biostatistics; Calculus C; Statistics B; Psychological Research Methods; Disease Control; Health Science Professional Practice. Letter of Commendation (2010); qualified for Honours (2010).

05 / interests

Squash and futsal · Piano and guitar · Hiking, camping and cycle touring · Cryptic crosswords · Fungi · Open-source software and data