

Eugine M. Whint • Software Engineer
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PROFESSIONAL SUMMARY

Software Engineer with 3+ years of experience designing and delivering production-grade backend systems, data pipelines, and full-stack applications in operational and scientific environments. Experienced in Python, FastAPI, REST API design, PostgreSQL, React, TypeScript, Docker, and cloud-based deployment workflows. Background in high-performance computing, real-time data ingestion, and standards-aligned systems supporting aviation and meteorological operations under WMO and ICAO frameworks. Proven ability to modernise legacy workflows, automate manual processes, and deliver reliable systems within Agile teams.

SELECTED ACHIEVEMENTS

- Built production-grade data ingestion pipelines using Python to automate retrieval, processing, and delivery of observational and model datasets.
 - Developed and deployed full-stack operational applications using FastAPI, PostgreSQL, React, TypeScript, Docker, and CI/CD workflows to support data-driven decision-making.
 - Built automated ECMWF GRIB2 ingestion workflows that enabled near real-time dataset updates for scientific and forecasting systems.
 - Migrated legacy scientific visualisation workflows from NCL to Python, improving maintainability and extensibility in HPC environments.
 - Applied machine learning techniques, including K-means clustering, to historical environmental datasets for pattern discovery.
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TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, Java, SQL, Shell scripting

Backend & APIs: FastAPI, REST API design, data validation

AI, Machine Learning & Data: scikit-learn, pandas, NumPy, xarray, time-series analysis, clustering, statistical modelling, feature engineering

Data Pipelines: Automated ingestion, ETL-style workflows, scheduled jobs, data cleaning, analysis and validation

Databases: PostgreSQL, SQLite, relational data modelling

Cloud & DevOps: Docker, Microsoft Azure, DigitalOcean, CI/CD, GitHub Actions, Linux

Frontend: React, Next.js, Tailwind CSS, shadcn/ui, responsive design, TanStack Query, Figma

Testing & Quality: Pytest, JUnit, Vitest, React Testing Library, Ruff, Black, technical documentation

Practices: Scrum, Kanban, clean code, software architecture, reproducible workflows

PROFESSIONAL EXPERIENCE

Grenada Meteorological Service – Grenada

Software Engineer

Sept 2025 – Present

Lead the digital modernisation of operational products, services, and internal systems for the Grenada Meteorological Service.

- Architected and deployed a monorepo containing applications for weather product automation, data visualisation, weather data management, and HR workflow management, built with Turborepo and pnpm workspaces.
- Built an HR workflow system supporting timesheets, shift rosters, leave requests, and shift swaps.
- Designed a type-safe API integration layer using Kubb to auto-generate TypeScript clients, React Query hooks, and Zod schemas from a FastAPI OpenAPI spec, eliminating manual API contract maintenance across all frontend apps.

- Built a centralised authentication system with server-side session management and cookie helpers, routing sign-in across all applications through a FastAPI authentication service.
- Containerised and deployed the full stack to DigitalOcean using Docker, with CI/CD via GitHub Actions.
- Coordinated with forecasting teams, end users, and leadership to align systems with WMO and ICAO operational standards and organisational needs.

Environment: Python, FastAPI, PostgreSQL, Next.js, React, TypeScript, Turborepo, Docker, GitHub Actions.

Earth Sciences New Zealand (formerly NIWA) – Wellington, NZ

Meteorological Software Developer (Contract)

Mar 2025 – Jun 2025

Contributed to modernisation of scientific data workflows within a high-performance computing environment.

- Migrated legacy NCL visualisation code to Python, improving maintainability and compatibility with the Cascade HPC system.
- Built automated GRIB2 ingestion pipelines using Python, shell scripting, and cron, enabling near real-time ECMWF dataset updates.
- Developed ensemble heatmap visualisation tools using matplotlib and xarray, integrated into NIWA's WXR platform.
- Standardised Python technical documentation using MkDocs, improving reproducibility across the team.
- Applied machine learning techniques (K-means clustering) to historical Wellington datasets to identify weather pattern groupings.
- Operated within a Linux-based HPC environment using remote execution and shell scripting.

Environment: Python, xarray, matplotlib, Linux, shell scripting, HPC.

Grenada Meteorological Service – Grenada

Software Engineer

Dec 2022 – May 2024

Delivered multiple modernisation initiatives across operational and data systems.

- Designed and deployed a climatology database (Python + PostgreSQL) automating validation of SYNOP data and conversion into METAR aviation reports.
- Integrated GEONETCast Americas satellite data workflows into Python-based ingestion and visualisation systems.
- Automated web-based weather data retrieval using Scrapy, reducing manual download tasks for forecasting staff.
- Built an internal web application using React and a Python backend to display operational weather datasets.

Environment: Python, PostgreSQL, React, Scrapy, Windows Task Scheduler.

Meteorologist

Nov 2015 – May 2024

- Analysed synoptic, mesoscale, and microscale weather data to produce forecasts for aviation, marine, disaster management, and public users.
- Cleaned, validated, and analysed meteorological datasets using SQL, Python, Excel, and QGIS.
- Delivered technical reports and briefings to aviation authorities, the public, and disaster management stakeholders.

Meteorological Technician

May 2009 – Nov 2015

- Continuously monitored, recorded, evaluated, and reported weather conditions for aviation and climatological purposes, including METAR, SPECI, and SYNOP observations.
- Plotted thermodynamic, synoptic, and upper-air charts.
- Monitored and maintained meteorological instruments.

EDUCATION

Master of Software Development (with Merit)

Victoria University of Wellington, New Zealand

Jul 2024 – Jun 2025

Postgraduate programme focused on professional software engineering, covering computer science fundamentals and applied software development practices aligned with industry standards.

- Object-oriented programming and software design using Java for enterprise-scale applications.
- Data structures, algorithms, and database systems supporting scalable software solutions.
- REST API development, distributed systems concepts, and web application architecture.
- Secure coding practices, testing methodologies, and software quality assurance
- Version control, CI/CD workflows, and Agile (Scrum) team-based development
- Industry-oriented software engineering projects focused on real-world system design, implementation, testing, and delivery.

Bachelor of Science in Mathematics

Indiana University East, Indiana, USA

Graduated Dec 2019 – GPA: 3.80

Strong foundation in linear algebra, multivariable calculus, differential equations, and discrete mathematics.

CERTIFICATIONS

Senior Meteorological Technician

Caribbean Institute for Meteorology and Hydrology, Barbados

Jan 2014 – Jul 2015

Completed the WMO Basic Instruction Package for Meteorologists (BIP-M), covering physical, dynamic, tropical, and aviation meteorology. Training aligned with World Meteorological Organization competency standards for operational forecasting and aviation meteorological services.

Wellington International Leadership Programme (WILP)

Victoria University of Wellington – Wellington, New Zealand

Jul 2024 – Jun 2025

Co-curricular leadership and global citizenship programme focused on international policy, cross-cultural leadership, and engagement with government, diplomatic, and academic leaders in New Zealand's capital.

REFERENCES

Available upon request.