Matthew Cann

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Summary

Senior Software Developer with 5+ years of Python experience and deep expertise in Python, building scalable, data-intensive applications that drive sustainable decision-making. Proven track record architecting REST APIs, data ingestion pipelines, and cloud infrastructure using PostgreSQL, Docker, and AWS. Passionate about code readability, comprehensive documentation, and test-driven development as foundational practices. Experienced technical leader who champions team culture, mentors through code reviews, and owns features from concept to deployment. Committed to leveraging technology for environmental impact and building tools that enable better sustainability outcomes.

Experience

Software Developer Feb. 2022 – Feb. 2023

Energy Toolbase *Calgary, AB*

- **Architected and delivered microservices-based REST APIs** for SaaS energy management platform serving 100+ commercial solar and battery storage clients with real-time IoT data ingestion and processing.
- **Engineered automated data pipeline** integrating external utility meter APIs, reducing operational overhead by 73% and dramatically improving dashboard loading performance for end-users through optimized data models.
- **Collaborated with remote cross-functional teams** including data scientists, frontend developers (TypeScript/React), and product managers to integrate APIs enabling customer participation in demand response.
- **Developed a load disaggregation and energy forecaster** using sklearn, training an MLP model on the NREL dataset to predict building heating/cooling consumption with a 2% mean error.

Software Developer June 2023 – Present

Hexagon *Calagry, AB*

- **Led full-cycle development** from ideation through delivery for multiple Python packages, architecting data processing pipelines, and observability tools used by 80+ engineers across product lines.
- **Optimized critical data processing algorithms** achieving 87% performance improvements in trajectory file parsing and GNSS log processing, enabling validation of significantly larger datasets with 79.8% storage reduction.
- **Spearheaded database modernization** of time-series databases (QuestDB, TimescaleDB) for constellation monitoring, leading production rollout and dashboard migration serving billions of satellite data records.
- **Drove technical leadership initiatives** including mentoring through code reviews, presenting to engineering communities of practice, and establishing best practices for modular design patterns and documentation standards.

Data Science Researcher May 2021 – August 2021

IoAirflow *Winnipeg, MB*

- **Architected foundational ML-driven platform** using Python and Scikit-learn for intelligent building management, establishing core development practices and software engineering standards that scaled from MVP to successful acquisition.
- **Developed predictive HVAC optimization software** using machine learning algorithms, successfully reducing building carbon emissions by 20% and achieving key sustainability targets for commercial building operations.
- **Built automated fault detection system** for industrial HVAC equipment validation using Python, achieving over 80% confidence in operational efficiency metrics through rigorous testing and data validation.

Technical Skills

Languages: Python, SQL, Git, Linux, SQL, Bash/Shell
Databases: PostgreSQL, MongoDB, InfluxDB, QuestDB, Elasticsearch, Redis.
Cloud & Infrastructure: AWS (S3, ECR), Docker, Kubernetes
CI/CD & DevOps: GitLab CI/CD, GitHub Actions, CircleCI, Jenkins
Backend & APIs: Flask, FastAPI, REST API Design, Microservices

Education

University of Waterloo Waterloo, ON

Master of Science in Mechanical Engineering *Sept. 2019 – Jan. 2021*

University of Manitoba Winnipeg, MB

Bachelor of Science in Mechanical Engineering *Sept. 2014 – April 2019*