John Pierman

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Professional Summary

Machine Learning Engineer with experience building production-grade machine learning, analytics, and data systems in Go and Python. Strong background in mathematics, economics, statistics, and computer science, with strengths in forecasting, probabilistic modeling, experimentation, optimization, and applied research. Combines software engineering and quantitative modeling to build scalable AI systems and data products.

Education

Brock University St. Catharines, ON
Honours BSc in Mathematics and Economics, Concentration in Statistics; Minor in Computer Science *Expected 2027*

- **Statistics & Econometrics:** Topics in Stochastic Processes and Models (A+), Mathematical Statistics I (A), Probability (A), Regression Analysis (A), Experimental Design (A), Forecasting Using Time Series Data (A), Econometrics (A), and Microeconometrics (A).
- **Computer Science & Quantitative Computing:** Artificial Intelligence (A), Programming for Big Data (A), Advanced Data Structures (A), Introduction to Computer Architecture (A), Bayesian and Causal Bayesian Networks (A), Discrete Optimization (A+), and Game Theory (A-).
- **Scholarships:** Brock Scholars Award ($10,000), Korah C&VS Isaac Newton Scholarship ($5,000), and Scotiabank + myBlueprint STEM Scholarship ($3,750).

Experience

Machine Learning Engineer Aug 2024 – Present
Arancia *Remote / Ontario*

- Build production machine-learning and analytics services in Go and Python for anomaly detection and user-behavior analytics across high-volume enterprise event data.
- Design end-to-end model and inference workflows using OpenSearch, APIs, statistical methods, retrieval-augmented generation (RAG), and automated data pipelines.
- Work with Terraform, Docker, and Kafka-style dataflow systems to support deployment, indexing, orchestration, and model-serving workflows.
- Translate raw operational data into deployable decision systems by combining software engineering, applied statistics, and ML model development.

Offensive Solutions Developer Intern May 2023 – Aug 2024
Calian IT & Cyber *Ontario*

- Developed internal security-testing, automation, and reporting tools in Go and C, strengthening systems design, data engineering, and performance-oriented programming skills.
- Built analyst-facing utilities that improved workflow efficiency and surfaced operational data for downstream reporting and decision support.
- Worked in a professional environment with APIs, infrastructure tooling, secure software practices, and deployment-oriented engineering workflows.

Selected Projects

Trackie Brock PB Fetcher | Python | web scraping | sports data   2026
- Built a Python scraper that collects Trackie U SPORTS results and computes Brock University athlete personal bests across recent seasons.
- Exported athlete-level event data to CSV with normalized performances, meet metadata, and derived dates for downstream analysis and sports-analytics style modeling.

Bayesian Network Library (`bngo`) | Go | open source | probabilistic ML   2025 – 2026
- Developed a Go package for Bayesian networks supporting structure learning, parameter learning, probabilistic inference, simulation, and prediction.
- Focused on interpretable modeling, uncertainty-aware reasoning, and reusable ML tooling relevant to forecasting and decision support.

Terraform Provider for HTTP Requests | Go | infrastructure | APIs   2025
- Contributed to a Terraform provider that executes HTTP requests and stores responses in Terraform state for downstream workflow use.
- Strengthened experience with provider development, API integrations, testing, DevOps-oriented tooling, and production-grade Go codebases.

Niagara Hotels Advertising Analysis | Python | regression modeling   2024
- Produced a regression-based geotargeting analysis for the Niagara Falls Canada Hotels Association to identify stronger advertising regions and improve ROI.
- Combined quantitative modeling with practical business communication to deliver an interpretable recommendation framework.

Undergraduate Thesis: Bayesian Network Structure Learning | research | probabilistic ML   2025 – Present
- Conduct undergraduate research under Dr. Pouria Ramazi on Bayesian network structure learning, with emphasis on efficient search, scoring, and interpretable probabilistic modeling.

Undergraduate Thesis: Cybercrime Economics | research | econometrics   2025 – Present
- Conduct undergraduate research under Dr. Taylor Wright on cybercrime economics, building empirical datasets and quantitative workflows for disclosure, market, and policy analysis.

Technical Strengths

Programming: Python, Go, R, Java
ML / Statistics: Regression, forecasting, stochastic processes, Bayesian networks, optimization, clustering, experimentation, econometrics, event studies, and statistical inference
Data / Infrastructure: APIs, OpenSearch, Terraform, Docker, Kafka-style pipelines, RAG workflows, Git, Azure DevOps, pandas, NumPy, matplotlib, and statsmodels

Leadership, Competition & Open Source

- **President, Brock University Bouldering and Climbing Club**   2025 – Present
- **Brock Badgers Track and Field**   Athlete
- **International Collegiate Programming Competition, North America East**   2023, 2024
- **Canadian University Chess Championship**   2023, 2024
- **Captain, High School Track and Field Team**   Korah C&VS
- **Captain, High School Wrestling Team**   Korah C&VS
- **Philanthropy and event leadership:** Organized the Mind Over Matter chess tournament, raising over $1,000 in support of the Child and Adolescent Mental Health Unit at Sault Area Hospital.
- **Open-source development on GitHub:** Maintain public repositories spanning Bayesian networks, Terraform tooling, sports-data scraping, and data infrastructure, with documented projects in Go, Python, and Java.