

John Pierman

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Professional Summary

Machine Learning Engineer with 3+ years of experience designing and shipping production ML, analytics, and security automation systems in Go and Python. Combines software engineering with mathematics, statistics, economics, and applied research to build end-to-end products spanning streaming ingestion, model orchestration, agentic workflows, APIs, data infrastructure, and analyst-facing interfaces. Current work includes autonomous SOC decisioning, anomaly detection, probabilistic modeling, and high-volume enterprise event analytics.

Education

Brock University

Honours BSc in Mathematics and Economics, Concentration in Statistics; Minor in Computer Science

• GPA: 3.8/4.0 | Subject averages: Mathematics A+ | Statistics A | Computer Science A | Economics A+

• Scholarships: Brock Scholars Award (\$10,000), Korah C&VS Isaac Newton Scholarship (\$5,000), and Scotiabank + myBlueprint STEM Scholarship (\$3,750).

Expected 2027

St. Catharines, ON

Experience

Machine Learning Engineer

Arancia

Aug 2024 - Present

Remote / Ontario

- Developed and productionized an end-to-end autonomous SOC platform that ingests security alerts through Kafka and orchestrates MCP-connected investigation tools to triage activity and reconstruct an auditable investigation timeline.
- Designed severity- and confidence-based decisioning that automatically blocks confirmed malicious indicators of compromise (IOCs) or opens cases, while routing lower-confidence outcomes to an analyst approval queue for manual response or false-positive disposition.
- Built and integrated MCP tools, backend orchestration, and data services that enrich alerts, correlate evidence, and surface findings through an analyst-facing frontend for investigation and response management.
- Develop production ML and analytics services in Go and Python using OpenSearch, APIs, RAG, Terraform, Docker, and automated data pipelines across high-volume enterprise event data.
- Translate security operations requirements into explainable, deployable decision systems and contribute across architecture, implementation, testing, and production delivery.

Offensive Solutions Developer Intern

Calian IT & Cyber

May 2023 - Aug 2024

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.
- Integrated APIs and infrastructure tooling while applying secure software practices, automated testing, and deployment-oriented engineering workflows.

Research

Undergraduate Thesis: Bayesian Network Structure Learning | probabilistic ML

2025 - Present

- Conduct research under Dr. Pouria Ramazi on efficient search, scoring, and interpretable probabilistic modeling, translating theoretical methods into reusable algorithms and experiments.
- Apply the research directly to bngo, an open-source Go library for Bayesian-network learning, inference, simulation, and prediction.

Undergraduate Thesis: Cybercrime Economics | econometrics | policy analysis

2025 - Present

- Conduct research under Dr. Taylor Wright using empirical datasets and reproducible econometric workflows to study cybersecurity disclosure, market dynamics, and policy impacts.

Technical Strengths

Programming: Python, Go, R, Java, TypeScript, C

ML / Statistics: Regression, forecasting, stochastic processes, Bayesian networks, optimization, clustering, experimentation, econometrics, event studies, and statistical inference

Data / Infrastructure: APIs, OpenSearch, PostgreSQL, Terraform, Docker, Kafka, MCP, RAG workflows, Git, Azure DevOps, Vercel, Next.js, pandas, NumPy, matplotlib, and statsmodels

Selected Projects

Brodie Bets | Go | Next.js | TypeScript | PostgreSQL | Vercel 2026 - Present

- Built a Vercel-ready analytics dashboard and Go API that ingests Brodie League public statistics to project team moneylines and player stat props using exponentially weighted and rolling-average models.
- Implemented a filterable betting board, model comparison and tuning, Postgres caching, and automated data synchronization for current and historical league data.
- Created walk-forward backtests that use only prior games at each prediction point; achieved 69.0% moneyline accuracy and a 0.204 Brier score across 87 Niagara Spring 2026 games.

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, prediction, and mixed discrete-continuous modeling.
- Designed reusable modeling workflows for interpretable, uncertainty-aware reasoning and connected the library to ongoing undergraduate research in Bayesian-network structure learning.
- Implemented modular learning and inference workflows intended for both research experiments and applied forecasting or decision-support use cases.

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.
- Produced analysis-ready athlete and event datasets with normalized performances, meet metadata, and derived dates for downstream sports analytics.
- Automated recurring collection and transformation steps to reduce manual review of athlete results and support reproducible analysis.

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.
- Worked across provider development, API integration, testing, DevOps tooling, and production-grade Go codebases.
- Strengthened experience with provider schemas, state management, and automated testing for infrastructure-as-code workflows.

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 return on advertising spend.
- Translated model findings into practical regional targeting recommendations for a non-technical stakeholder audience.
- Combined statistical modeling with stakeholder-focused communication to support practical marketing decisions.

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, Korah C&VS Track and Field Team**

• **Captain, Korah C&VS Wrestling Team**

• **Philanthropy and event leadership:** Organized the Mind Over Matter chess tournament, raising over \$1,000 for the Child and Adolescent Mental Health Unit at Sault Area Hospital.

• **Open-source development:** Maintain public repositories spanning Bayesian networks, Terraform tooling, sports-data scraping, and data infrastructure in Go, Python, and Java.