Nolan Brennan

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Education

University of Maryland, College Park, MD May 2026
B.S. in Computer Science & B.S. in Economics; Minor in Statistics *GPA: 3.5*
– Honors College Citation, May 2024; Specialization in Machine Learning

Relevant Coursework

Machine Learning, Artificial Intelligence, Natural Language Processing, Computer Vision, Parallel Computing, Compilers, Data Science, Algorithms, Object-Oriented Programming (Java)

Technical Skills

Languages: Java, Python, JavaScript, C/C++, OCaml, Racket, Rust, x86 Assembly, PowerShell, HTML, CSS
Technologies: Git, AWS, Linux/Unix, SQL, RESTful APIs, Docker, Kubernetes, pandas, PyTorch, NumPy, Matplotlib, Splunk, Stata, scikit-learn

Experience

SWIFT (Society for Worldwide Interbank Financial Telecommunication) via TechWish Dec 2025 – Present
Machine Learning Engineer Contractor
– Designed and deployed AI-driven infrastructure for operational monitoring within SWIFTNet, supporting over 11,000 global financial institutions and sustaining 99.999% system uptime.
– Implemented transformer-based anomaly detection models for real-time outage identification, enabling automated diagnostics and reducing incident response times to under one minute.
– Supported early adoption and integration of C3 AI and AWS cloud platforms for scalable, company-wide AI operations.

SWIFT (Society for Worldwide Interbank Financial Telecommunication) Jun 2025 – Aug 2025
AI Engineering Intern
– Built and deployed LSTM/Transformer autoencoder models for anomaly detection using Python on HPC clusters.
– Developed scalable MLOps pipelines with AWS (SageMaker, ECS, Lambda, S3) and Docker containers.
– Automated infrastructure and deployments using Infrastructure as Code and DevOps best practices.
– Deployed models to production via AWS CloudWatch, reducing administrator time by thousands of hours annually.

University of Maryland, Department of Economics May 2025 – Present
Economic / Machine Learning Research Assistant
– Developed ML models (e.g., clustering, one-class SVM) to reclassify occupational categories using the O*NET dataset.
– Collaborated with labor economists to refine models and translate findings into policy-relevant insights.
– Processed and engineered large economic datasets using Python (NumPy, pandas, scikit-learn).

Thales Defense Security Inc. Jun 2023 – Jul 2023
Cybersecurity Intern
– Developed PowerShell scripts to integrate security tools via RESTful API calls, enhancing automation.
– Designed and maintained Splunk XML dashboards to analyze and manage internal data volumes.

Projects

SWIFT 2025 Hackathon Winner – Currency Prediction Flow Model Jul 2025
– Prototyped a Transformer-based model to forecast currency exchange rate movements from SWIFTNet capital flow data.

Panorama Image Stitching
– Developed a computer vision pipeline to stitch overlapping images into seamless panoramas using feature detection and RANSAC-based homography.

Quizbowl (Jeopardy) Question Answering Model
– Built a Transformer-based (Ollama) question answering model integrating Retrieval-Augmented Generation (RAG) and Declarative Self-improving Python (DSPy).

AWS Cloud Operations Automation and Error Detection
– Automated AWS operations monitoring to detect and classify infrastructure errors (e.g., Redis, S3, ECS) while filtering noise.
– Integrated CloudWatch, Lambda, and SageMaker pipelines for anomaly detection and alert prioritization, reducing false positives.