Stephen Sommer

Software Developer | Machine Learning Graduate Student
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Education

Georgia Institute of Technology — Atlanta, GA
M.S. Computer Science, Machine Learning Specialization — *Aug. 2025 – May 2027*

Winona State University — Winona, MN
B.S. Computer Science, Minor in Psychology, GPA 3.86 — *Aug. 2021 – May 2024*

Rochester Community and Technical College — Rochester, MN
A.S. Computer Science, GPA 4.0 — *Aug. 2017 – May 2021*

Experience

Developer — Winona, MN
Fastenal — *Jan. 2023 – Present*

- Implemented content filtering and a data ingestion pipeline for an enterprise AI copilot using Azure OpenAI and Azure AI Foundry with SharePoint integration, enabling automated product identification from images with confidence scoring and Excel-based reporting.
- Built and maintained CI/CD pipelines in Azure DevOps for ML workflows, integrating Git version control, model versioning, Terraform-provisioned infrastructure, and automated deployment.
- Designed enterprise BI solutions using Power BI and Microsoft Fabric, including dashboards, semantic models, data marts, and KPI documentation to support analytics and reporting needs.
- Built and maintained ETL pipelines in Oracle PL/SQL and Python on Databricks, feeding the enterprise data warehouse and data lake, producing curated datasets and owning source-to-report data quality, cleaning, and validation for downstream analysts and reporting teams.

Software Developer — Winona, MN
Winona State University — *Aug. 2022 – May 2024*

- Developed and maintained web applications for Winona State University main website and the Computer Science's department website at Winona State, enhancing user experience and site functionality.
- Configure and deployed virtual machines for academic courses, providing students with consistent development environments and technical infrastructure.
- Conducted machine learning research on cybersecurity (R2L intrusion detection) and medical imaging (prostate MRI segmentation), improving detection accuracy by 10% through ensemble methods and deep learning techniques.

Additional Professional Experience — Rochester/Winona, MN
Various (Mayo Clinic, Watlow, Benchmark) — *May 2008 – Jan 2023*

- Developed problem-solving and precision skills in clinical IT and manufacturing, supporting complex system troubleshooting.
- Diagnosed and repaired hardware and electronics in regulated environments, including desktop/laptop support and patching at Mayo Clinic, and equipment setup, calibration, and test operations under strict quality, ESD, and safety standards in manufacturing.

Projects

liminal-eeg: EEG State Decoding | *MNE, PyTorch, Deep Learning* — GitHub

- Built an EEG preprocessing and feature-extraction pipeline (ICA artifact removal, Welch PSD band power) producing a 4,273-epoch $\times$ 120-feature dataset from 34-subject recordings.
- Implementing deep learning models (EEGNet CNN, temporal Transformer with attention) benchmarked against a published SVM baseline under leave-one-subject-out cross-validation.

Prostate MRI Segmentation | *Deep Learning, Medical Imaging, PyTorch* — GitHub

- Implemented a 3D segmentation pipeline for prostate MRI using nnU-Net v2 on the Medical Segmentation Decathlon dataset, demonstrating applied ML in a clinical imaging domain.
- Developed preprocessing, augmentation, and evaluation pipelines suited to low-volume medical imaging datasets.

Q-learning vs. SARSA on Taxi-v3 | *Reinforcement Learning, Gymnasium, Python* GitHub

- Compared off-policy and on-policy tabular TD control under an annealed ϵ-greedy schedule; Q-learning converged to the known-optimal policy (100% success, $+7.86$ mean return, 13.1 mean steps over 1,000 held-out episodes) while SARSA converged to a more conservative policy at $+5.57$.
- Built fully seeded, reproducible experiment tooling that regenerates all metrics and figures from a single command.

R2L Intrusion Detection System | *Decision Trees, Python* Paper

- Built a decision-tree classifier for remote-to-local (R2L) attack detection on the KDD dataset; published findings on detection performance and class-imbalance challenges in minority attack categories.

Technical Skills

Programming Languages: Python, SQL (Oracle PL/SQL, PostgreSQL, T-SQL), R, C#, Java, JavaScript
AI/ML: PyTorch, TensorFlow, Scikit-learn, Hugging Face, Azure OpenAI, Azure AI Foundry, Azure ML, NLP, Computer Vision, Reinforcement Learning
Data Engineering & Warehousing: ETL, Data Warehousing, Data Modeling, Data Curation, Data Quality, Microsoft Fabric, Databricks, Apache Spark, BigQuery, Toad for Oracle, Jupyter
BI & Analytics: Power BI, DAX, Semantic Models, SSRS, Tableau, Ad Hoc Analysis, Dashboard Design
Cloud & MLOps: Azure (ML, AI Services, Data Lake, DevOps), AWS, GCP, Terraform, Docker, CI/CD, Git
Web Development: React, Flask, FastAPI, .NET, REST APIs, Node.js