Tyler Smith, PhD

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Summary

- A data scientist transitioning to cybersecurity with a STEM PhD, Security+ certification, and over 7 years of experience building and operationalizing machine learning models and data pipelines.
- Proven ability to detect anomalies in complex datasets using Python and SQL, develop security automation tools, and build secure infrastructure using AWS, Terraform, and Ansible.

Technical Skills

Detection and Machine Learning

Python (pandas, scikit-learn, FastAPI), SQL; Git, GitHub; anomaly detection; supervised learning (random forests, neural networks, generalized linear models); unsupervised learning (k-means, PCA); statistical analysis; model evaluation (precision-recall and receiver operating characteristic [ROC] curves).

Cybersecurity and Cloud Security

AWS (IAM least-privilege, security groups); host hardening (UFW, OpenSSH, Fail2Ban, ClamAV); vulnerability scanning (Amazon Inspector); observability (CloudWatch, CloudTrail); log analysis.

Cloud Architecture

AWS (EC2, RDS, S3, EventBridge, Lambda, Bedrock, SNS, Route 53); infrastructure-as-code (Terraform); configuration management (Ansible); Linux administration; Bash.

Projects

Developed AI/LLM-powered Security Automation Tool for Vulnerability Management

Built AI/LLM security automation tool with EventBridge and Lambda to process Inspector vulnerability findings. Lambda Python functions call LLM API for remediation recommendations sent via SNS alerts. Recommendations include exposure assessment based on network and host configurations. [**GitHub**].

Deployed and Secured Web Application (www.rainydaypolitics.com)

Deployed AWS web server (EC2) and database (RDS/Postgres) using Terraform and Ansible. Implemented defense-in-depth security posture, including IAM least-privilege, security groups, Linux hardening (UFW, OpenSSH, Fail2Ban), antimalware (ClamAV), and vulnerability scanning (Amazon Inspector) [**GitHub**].

Professional Experience

Postdoctoral Research Fellow

Icahn School of Medicine at Mount Sinai | 2023-Present

- Built supervised and unsupervised learning models, including feature engineering and model evaluation with precision-recall and receiver operating characteristic curves.
- Developed automated workflows using Python, SQL, and Git/GitHub, ensuring secure and compliant handling of multi-jurisdiction regulated health care datasets.
- Published peer-reviewed articles (career total: 9) and presented research at national and international conferences (12), communicating analytical insights to technical and nontechnical audiences.

Doctoral Researcher

Johns Hopkins University | 2019-2023

- Applied unsupervised learning for anomaly detection in high-dimensional data with techniques directly applicable to identifying unusual network behavior and user activity.
- Designed scalable and secure data pipelines for research data subject to federal privacy regulations (Common Rule) using R, SQL, and Git/GitHub.

- Created static and interactive data visualizations using ggplot2, Plotly, and Seaborn to drive exploratory data analysis and enhance scientific communication.

Staff Scientist
Earthjustice | 2016-2019
- Partnered with senior leadership to resolve scientific and technical issues underlying high-impact litigation and administrative advocacy.
- Communicated scientific findings to technical audiences (scientific conferences) and non-technical audiences (attorneys, policymakers, media).

Manager and Consultant
Consumer Reports | 2015-2016
- Analyzed datasets on food safety (e.g., antibiotic use in food animals, arsenic in food) using SAS and Stata for publication in *Consumer Reports*.
- Collaborated with editors and reporters to ensure accuracy of technical content published in *Consumer Reports*, upholding the stringent editorial standards of a prominent brand in a litigious environment.
- Represented organization to foreign governments at meetings of the World Health Organization's Codex Alimentarius Commission on international trade standards.

Program Officer
Johns Hopkins Center for a Livable Future | 2011-2015
- Developed process-based environmental exposure and risk models, including cancer risks assessments for food additives, and documented methodologies for non-technical clients.
- Led policy outreach, including Capitol Hill briefings, Congressional and agency meetings, op-eds, and advising advocacy coalitions on scientific and technical topics.

Education

PhD, Johns Hopkins University
Exposure Science and Environmental Epidemiology | 2023

MPH, Johns Hopkins University
Epidemiology and Biostatistics | 2015

BA, Johns Hopkins University
History | 2011

Certifications

- CompTIA Security+ (October 2025)

Eligibility

- DoD IAT Level II-compliant (Security+)
- Security clearance-eligible (U.S. citizen)