

EXPERIENCE

Proofpoint

Durham, NC

Email cybersecurity leader for the Fortune 100. Tech Lead for 7 years on various teams within central AI/ML organization.

Staff Machine Learning Scientist

May 2024 - Present

- **Agentic Webpage Sandbox:** Technical architect and lead interviewer for new AI/ML team of 4 staff in Cork, Ireland. Developed and deployed an agent with novel skills, such as CAPTCHA evasion, to click through webpages and analyze for phish or malware. Led roadmap and standups while coordinating Claude Code usage and best practices across team.
- **URL Defense Oracle:** Developing a high-precision, multi-call LLM workflow for detecting evolving URL-based threats, providing second-opinion support to SOC analysts. Implemented multi-GPU SFT and CPT pipelines using DeepSpeed for scalable training and knowledge distillation of multimodal QwenVL models and billions of URL-based threat tokens.
- **Benign Email Data Generation with Differential Privacy:** Finetuned foundation models using HF and Opacus on email corpora from beta customers; evaluated generations via standard metrics and downstream classifier performance.

Machine Learning Manager

April 2022 - May 2024

- **ML Platform Team:** Designed and implemented a ML development system and CLI with Flyte, MLFlow, Postgres on k8s to replace SageMaker tooling. Custom artifact management. 8 different projects leveraging the framework today.
- **DLP ML Team:** Released two features in production: Sensitive Form classification using deep metric learning for 1000's of DLP customers and FP Detection feature using XGBoost and approximate NN for internal triage analysts. Deployed on AWS using Kinesis, ECS, and Lambda.

Senior Data Scientist & Data Scientist

May 2019 - April 2022

- **NLP Classifier System:** implemented and maintained and scaled a spaCy-centric framework to serve 54 NLP classifiers over 100Ks social media posts daily across 1000's of customers. Addressed customers FP/FNs weekly.
- **Promissory Images Classifier:** designed and delivered an image classification system for financially promissory image detection. Leveraging YOLOv3, classical ML, and approx NN. Key differentiator for all finserv customers. Precision/recall maintaining over 24+ months with retrainings and annotation. Created autoscaled ECS deployment.
- **Physical Locations Classifier:** constructed custom dataset of 1000's of spans for an NER model to detect mentions of a location with an address. Selected DistilBERT over BiLSTM-CRF. Enabled for hundreds of Patrol Security accounts.

Automated Insights

Durham, NC

Natural language generation startup before NLP had its Imagenet moment. Lead Data Scientist on two projects.

Senior Data Scientist & Data Scientist

July 2017 - May 2019

LEADERSHIP & RESEARCH IMPACT

- **Organizational Leadership & Architecture:** Co-founded new AI/ML team in Cork, Ireland; hired founding manager and initial team members. Co-authored successful IDA (Irish Development Authority) grant proposal on pre-training cybersecurity models, funded with near-perfect evaluation marks.
- **Hiring & Talent Development:** Directed 2 full hiring processes (junior and staff-level engineering); participated in 12+ additional interview panels across engineering and ML roles. Managed full performance lifecycle for direct reports, including structured coaching and formal improvement plans.
- **Mentorship & Academic Collaboration:** Mentored 4 summer interns; supervised 2 Duke MIDS teams and 1 UC Berkeley team on applied ML research. Contracted with Washington State University on PU Learning research and translated novel methods into production classification training loops.
- **Innovation & External Impact:** Named inventor on 3 patents in applied machine learning for cybersecurity. Placed top 3 in 3 company hackathons. Authored 1 technical blog, delivered multiple external presentations and panel discussions.

EDUCATION

- **M.S., Electrical Engineering** — Duke University *2014 - 2017*
- **B.S., Biomedical Engineering** — North Carolina State University *2010 - 2014*