

# Timothy York

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## SUMMARY

Associate Machine Learning Engineer with nearly four years applying Python, PyTorch, TensorFlow, SQL, NLP, and **model evaluation** methods across trust and safety, content quality, and data products. Builds reproducible **ML pipelines**, monitoring dashboards, and **human-in-the-loop** review tools that help policy specialists identify risky activity consistently. Explores LLM and GenAI workflows using retrieval, structured prompts, guardrails, and multi-step orchestration, with close attention to transparency, auditability, and responsible AI. Converts experiments into clear documentation for engineering, **data science**, policy, and product partners. Brings practical judgment, steady communication, and genuine interest in making digital communities safer and more inclusive.

## EXPERIENCE

### Machine Learning Engineer

January 2025 - Present

SignalHarbor Labs

Columbus, Ohio

Owns trust and safety ML initiatives spanning text classification, ranking, monitoring, GenAI review support, and audit-ready delivery. Partners with policy, product, data science, and engineering groups across production workflows.

- Built **PyTorch** classifiers for spam and harassment signals across 18 million weekly records.
- Created **Python** and **SQL** feature pipelines with validation, versioning, and reproducible training workflows.
- Developed monitoring views for precision, recall, drift, review volume, and threshold changes.
- Prototyped retrieval-augmented **GenAI** support with citations, prompt controls, and restricted-action guardrails.
- Compared PyTorch and **TensorFlow** experiments against human labels for safer operating thresholds.
- Documented **model cards**, experiment decisions, limitations, and audit artifacts for cross-functional handoffs

### Machine Learning Engineer

July 2023 - December 2024

CivicPattern Analytics

Raleigh, North Carolina

Delivered **NLP** and data science solutions for digital community services, guiding **model evaluation**, scheduled scoring, compliance reporting, and staged deployment decisions. Worked closely with policy analysts and technical stakeholders.

- Implemented Python NLP pipelines that routed high-risk user reports into specialized review queues.
- Consolidated event, text, and reviewer data with SQL, pandas, provenance, and privacy controls.
- Evaluated **TensorFlow** and **PyTorch** baselines using confusion matrices, calibration, and stratified validation.
- Automated scheduled scoring and performance reporting for weekly quality and **compliance** reviews.
- Translated ambiguous **policy** guidance into labeled examples, escalation rules, and acceptance criteria.
- Presented residual risks and model tradeoffs, supporting a staged deployment decision

### Data Science Analyst

September 2022 - June 2023

BlueOak Data Cooperative

Durham, North Carolina

Supported supervised learning studies through data preparation, exploratory NLP analysis, baseline modeling, reviewer tooling, and responsible-use assessment. Maintained clear records that helped senior scientists move from inquiry toward reliable evaluation.

- Prepared customer-support datasets with SQL and **Python** for supervised learning studies.
- Built exploratory notebooks that surfaced abuse-report language patterns for NLP feature design.
- Compared logistic regression, tree models, and TensorFlow text models with **precision**, **recall**, and F1.
- Created a **human-in-the-loop** labeling interface for rationale and disagreement capture.
- Tested prompt-based LLM classification against rules, documenting bias and reproducibility concerns.
- Maintained data dictionaries, experiment notes, and deployment-readiness checklists for **auditability**

## PROJECTS

### Policy Evidence Copilot 📅 2025

A useful safety tool does more than produce an answer. It shows its evidence. Built a retrieval-augmented workflow that assembled policy passages, cited sources, applied guardrails, and routed uncertain cases for human review.

### Risk Signal Evaluation Lab 📅 2024

Better moderation starts with better questions. Created a reproducible evaluation environment for NLP classifiers, threshold studies, calibration checks, confusion analysis, and reviewer-capacity scenarios.

## LEADERSHIP & AWARDS

- SignalHarbor Labs Responsible AI Recognition, 2025; honored for practical audit documentation and safer GenAI review workflows.

- CivicPattern Analytics Delivery Award, 2024; recognized for turning ambiguous policy guidance into usable evaluation criteria.
- North Carolina State University Computer Science Leadership Award, 2022; celebrated peer mentoring and applied ML work.

## EDUCATION

**Bachelor's Degree in Computer Science**

North Carolina State University   GPA: 3.7

2022

*Raleigh, North Carolina*

**Coursework:** Machine Learning, Natural Language Processing, Database Systems, Software Engineering, Data Mining

## CERTIFICATIONS

- Google Advanced Data Analytics Professional Certificate 📅 2023
- AWS Academy Machine Learning Foundations 📅 2024
- Responsible AI Practices, Microsoft Learn 📅 2024

## TECHNICAL SKILLS

- **Programming Languages:** Python, SQL, Bash
- **Machine Learning Frameworks:** PyTorch, TensorFlow, scikit-learn
- **Data Analysis Tools:** pandas, Jupyter, NumPy
- **NLP Methods:** Text classification, ranking, tokenization
- **GenAI Systems:** LLMs, retrieval-augmented generation, prompt evaluation
- **ML Operations:** ML pipelines, model deployment, scheduled scoring
- **Model Monitoring:** Precision, recall, class drift
- **Data Engineering:** Feature engineering, dataset validation, data versioning
- **Responsible AI:** Guardrails, bias review, human-in-the-loop
- **Documentation Standards:** Model cards, audit artifacts, data dictionaries
- **Cloud And Containers:** AWS, Docker, AWS Machine Learning Foundations
- **Development Tools:** Git, REST APIs, modular components

## SKILLS

- |                    |                    |                         |                           |
|--------------------|--------------------|-------------------------|---------------------------|
| • Machine learning | • SQL              | • LLM orchestration     | • Model monitoring        |
| • Python           | • NLP              | • Data exploration      | • Responsible AI          |
| • PyTorch          | • Model evaluation | • ML pipelines          | • Technical documentation |
| • TensorFlow       | • GenAI workflows  | • Cross-functional work |                           |

## PROFESSIONAL AFFILIATIONS

- Association for Computing Machinery member; contributes thoughtful ML practice and peer exchange.
- Partnership on AI community participant; supports responsible AI, transparency, and inclusive technology discussions.

## LANGUAGES

- English (Native)
- Spanish (Intermediate)

## ADDITIONAL INFORMATION

**Work Status** : Authorized to work in United States. No sponsorship required.

## REFERENCES

AVAILABLE ON REQUEST