

# Randolph E. Schilke

Senior AI Engineer | MLOps Platform Architect | MPH, Biostatistics & Epidemiology

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## SUMMARY

ML platform engineer and full-stack data scientist with 9 years taking models from research into production in regulated healthcare and federal environments. Currently architect an enterprise hub-and-spoke MLOps platform on AWS and own a multi-account platform serving 37 clinical prediction models across 8 lines of business at Blue Cross Blue Shield of North Carolina. Previously built the VA's first production LLM pipeline. MPH in biostatistics; 3 peer-reviewed publications, 150 citations.

## TECHNICAL SKILLS

**Cloud & IaC:** AWS CDK (Python IaC), CloudFormation, CodePipeline, CodeBuild, CodeStar Connections, Lambda, Step Functions, EventBridge, SQS, S3, KMS, IAM, VPC/EC2, Secrets Manager, SSM Parameter Store, SNS, CloudWatch, ECR, ECS Fargate, App Runner, Amplify/Cognito; Azure (Databricks, ADLS, Synapse, DevOps); GovCloud (AWS/Azure/GCP)

**ML Platform & MLOps:** SageMaker (Pipelines, Model Registry, Model Monitor, Clarify, Processing), MLflow, feature stores, cross-account model promotion, automated retraining, drift and bias monitoring, model validation, CI/CD for ML, hub-and-spoke platform design, CDK Pipelines, Copier project templates, multi-region disaster recovery

**Languages:** Python, PySpark, SQL, R, SAS, TypeScript, JavaScript, Node.js, Swift/SwiftUI, Kotlin

**ML & AI:** LLMs, agentic pipelines, LangChain/Langflow, crewAI, llama.cpp, CUDA, YOLO, Core ML/Create ML, PyTorch, scikit-learn, XGBoost, H2O, NLP and entity extraction, computer vision, survival analysis, propensity score matching, gradient boosting, time series

**Data:** Snowflake, Delta Lake, Parquet, ADLS, SQL Server, DB2, Firestore, EPIC EMR, VISTA EMR, UNOS STAR, SRTR registries

**DevOps:** GitHub Enterprise, GitLab, Azure DevOps, Jenkins, Docker, pytest, VPC-connected build environments

**Leadership:** 10-person team management, mentorship, code review, standards and governance, Agile/JIRA, stakeholder engagement

## PROFESSIONAL EXPERIENCE

### Blue Cross Blue Shield of North Carolina

May 2026 – Present

Senior AI Engineer

- Architecting MLOps v3, an enterprise hub-and-spoke MLOps platform on AWS: a hub of shared, KMS-encrypted S3 data tiers with cross-account trust, the coe-utils library of reusable CDK constructs, and a Copier template that generates ready-to-deploy ML projects, so onboarding a new model needs no platform change.
- Designed registry-first model promotion: a lifecycle change in the dev SageMaker Model Registry triggers an EventBridge-driven orchestrator and cross-account promotion pipelines with a forward-only gate, human approval for prod, and idempotent registration, so models move without redeploying code.
- Building multi-region resilience: cross-region replication of approved model artifacts, an event-driven registry mirror with scheduled reconciliation, and secondary-region pipelines that wait on the primary.
- Own CarePath, the production platform serving 37 clinical prediction models across 8 lines of business, and authored coe-utils, an internal Python package standardizing shared MLOps utilities across teams.

### Blue Cross Blue Shield of North Carolina

Jan 2025 – May 2026

AI/ML Senior Support Engineer

- Architected and built CarePath, a multi-account AWS MLOps platform running 37 models across 8 lines of business (Medicare Advantage, Commercial, M360, Maternity, Behavioral Health, Condition Care), with all infrastructure defined in Python CDK.
- Built 3-stage cross-account CI/CD promotion (dev → stage → prod) on CodePipeline with CodeStar Connections to GitHub Enterprise, branch-specific triggers, and deterministic CloudFormation asset publishing via CodeBuild.
- Designed cross-account model promotion: KMS-encrypted silver-to-gold artifact buckets with cross-account S3/KMS policies; a Lambda custom resource validates artifacts and auto-registers and approves versions in SageMaker Model Registry on every deploy.
- Built SageMaker training pipelines running cohort creation → training → parallel baseline generation (Data Quality, Model Quality, Bias) via Model Monitor and Clarify, with version-stamped artifacts for reproducibility.
- Implemented cron-scheduled data quality and bias monitoring through SageMaker MonitoringSchedules at the model-family level, with CloudWatch alarms and dashboards.
- Stood up a separate PR validation pipeline running pytest and linting in VPC-connected CodeBuild, plus an SNS and Lambda construct that posts commit status back to the GitHub Enterprise API using a Secrets Manager-stored PAT.

### InnoVet Health

May 2023 – Oct 2025

AI/ML Lead Data Scientist

Client: U.S. Department of Veterans Affairs

- Built the VA's first production LLM pipeline: an end-to-end Azure Databricks pipeline for clinical note processing. Authored the abstract, presented to VA stakeholders twice to secure approval, and left it running in automation with an estimated \$5M+ in annual savings.
- Maintained and extended the 30-Day Decomensation program, the longest continuously running ML pipeline in VA history.
- Delivered the MIRTH program's infrastructure end-to-end in AWS CDK (Python): S3, Lambda, Step Functions, SageMaker Processing, ECR, SNS, IAM, and CloudWatch, with updated architecture documentation for repeatable deployment.

- Authored the VA’s first external API data ingestion, pulling Apple App Store and Google Play data into HDAP; still in automation.
- Unblocked a TeleDerm computer vision project stalled for a year by labeling 10,000+ dermatology images and building a reusable annotation application in AWS.
- Established data science standards for the OCC: sandbox repository, MLflow experiment and registry conventions, GitHub repositories for all OCC projects, and written onboarding guides. Led code reviews and mentored the NAII team.

#### Schilke App Solutions LLC

May 2023 – Present

##### Founder and AI Architect

- Concurrent side venture: ship production AI apps to the Apple App Store and Google Play — four live titles and one USPTO trademark.
- 3LYTRA: autonomous robot platform with WebRTC remote control (aiortc, Firebase RTDB signaling, TURN NAT traversal), on-device LLM inference via Dockerized llama.cpp with CUDA on Jetson Orin Nano, and YOLO object detection on Raspberry Pi 5.
- BeachBop: 18 on-device Core ML classifiers trained on 100k+ labeled images, with ARKit/LiDAR measurement and a 2,500-photo reference gallery. USPTO trademark #7699228.

#### Mercy

Aug 2022 – May 2023

##### Lead Data Scientist

- Managed a 10-person data science team of senior and lead individual contributors at one of the largest US health systems.
- Established the organization’s first MLOps pipeline in Azure Databricks (MLflow, PySpark) with production scripts for feature store, inference, retraining, and validation; built Mercy’s first real-time models integrated with EPIC EMR.
- Productionalized four models via Databricks Workflows and moved the team from notebooks to Azure DevOps with mandatory peer review.

#### Blue Cross Blue Shield of Florida

Apr 2022 – Aug 2022

##### Senior Data Scientist

- Held production oversight of 45 active models across all GuideWell enterprise business segments: deployment, debugging, redeployment, and post-production monitoring, plus a model validation dashboard.
- Built the 2022 Federal Employee Program model and NLP and sentiment pipelines; mentored four interns and junior data scientists.

#### Blue Cross Blue Shield of Florida

Jul 2020 – Apr 2022

##### Data Scientist

- Built propensity-to-buy models for Medicare enrollment (O65 AEP South and Non-South Florida, U65 OEP subsidy and non-subsidy), care management engageability, and Medicare Advantage disenrollment.
- Managed IT change requests and led peer code reviews; Honorable Winner, 2021 GuideWell Innovation Challenge.

#### GuideWell Connect

Apr 2019 – Jul 2020

##### Data Scientist

- Built response and conversion models for Florida Blue direct-mail campaigns (2020 Age-In gradient boosting; 2019 O65 and U65 logistic regression) and patched data pipeline leaks; 1st place, 2020 GuideWell Data Science Hackathon.

#### Florida Department of Health

Apr 2018 – Mar 2019

##### Epidemiologist

- Owned CDC data processing and deliverables for Florida’s opioid overdose surveillance program (ESOOS); automated state and county quarterly non-fatal reporting and SUDORS fatal case uploads in SAS.
- Applied text mining to EMS clinical notes to improve syndromic surveillance case definitions and predictive models; presented findings to the CDC EMS All-State Workgroup and authored seven public-facing state reports.

#### Henry Ford Health System

Jul 2017 – Apr 2018

##### Data Scientist

- Managed the Transplant Institute data warehouse and delivered enterprise analysis across UNOS STAR, SRTR registries, and EPIC EMR.
- Built survival models and propensity score matching pipelines supporting peer-reviewed publications in Gastroenterology, Hepatology, and Transplant International.

## EDUCATION

#### New York Medical College

2017

Master of Public Health (MPH), Biostatistics and Epidemiology

#### Grand Valley State University

2014

Bachelor of Science (BS), Statistics and Biology

## RECOGNITION & PUBLICATIONS

- 3 peer-reviewed papers, 150 citations: Gastroenterology (IF 20.8), Hepatology (IF 15.0), and Transplant International (IF 3.2), 2018–2020.
- 7 public-facing Florida DOH opioid surveillance reports; 15+ conference presentations including Poster of Distinction, American Transplant Congress 2018, and an oral presentation at the 27th International Congress of The Transplantation Society, Madrid.
- Apple App Store and Google Play approvals (2023, 2026); Outstanding Scholarship Award, New York Medical College (2017).