Matt Oremland, PhD

Senior Director of Engineering and Data Operations

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PROFESSIONAL SUMMARY

Data platform and operations leader with direct experience managing HCP and HCO healthcare reference data at Gilead Sciences, combined with 10+ years architecting enterprise data platforms and leading technical teams in life sciences. Proven expertise in data acquisition, cleansing, standardization, and quality management for healthcare professional and organization profiles. Strong background in cloud platforms (AWS, Snowflake, Databricks), ETL/ELT processes, data governance, and building scalable data systems that handle complex data source integration. Hands-on technical leader with experience in Python, SQL, full-stack development, and production ML deployment in pharmaceutical and biotech organizations.

PROFESSIONAL EXPERIENCE

Gilead Sciences   2023 – 2024
Director, Data & Analytics (Medical Affairs)   *Foster City, CA*

- Led team of ~5 people (dashboard developers and analysts) managing HCP and HCO healthcare reference data operations for Medical Affairs—primary dataset was healthcare professional and healthcare organization profiles including interactions, affiliations, engagements, and relationships
- Built comprehensive Spotfire dashboards from scratch tracking HCP/HCO profiles, affiliations, engagements, and relationship networks, enabling Medical Affairs to monitor healthcare professional interactions and ensure compliance
- Architected centralized data lake consolidating HCP/HCO data from multiple internal and external sources, implementing data acquisition, cleansing, standardization, and quality checking processes to maintain accurate, up-to-date healthcare reference data
- Established data governance frameworks specifically for healthcare reference data, implementing data quality standards, metadata management, access controls, and validation procedures ensuring data integrity and regulatory compliance
- Managed vendors responsible for data acquisition and enrichment of HCP/HCO profiles, defining requirements, assessing quality, and ensuring deliverables met standards for accuracy and completeness
- Owned end-to-end data platform architecture, build, and delivery—designed scalable cloud-based infrastructure, implemented ETL pipelines, and enabled self-service analytics across Medical Affairs organization
- Provided technical leadership and strategic guidance to team, fostering culture of data quality excellence and continuous improvement while collaborating with Product, IT, and business stakeholders

Redica Systems   2024 – Present
Director, Data Strategy & Analytics   *Remote*

- Led architecture, build, and delivery of multi-tenant data platform on Snowflake supporting pharmaceutical clients (Eli Lilly, Merck)—owned data source ingestion from government sources (FDA inspection reports), data pipeline design, curation/standardization, and comprehensive data governance
- Architected and deployed production LLM classification system that acquires, cleanses, and standardizes unstructured government data (FDA 483 reports) into structured profiles—designed data acquisition pipelines, implemented quality checking processes, and established data integrity controls
- Built reference data architecture to harmonize complex data sources including governmental regulatory data, manufacturing site profiles, and entity relationships—implemented data modeling, ETL/ELT processes, and master data management
- Drove technical decisions and design, translating complex data source requirements and product vision into scalable technical architecture supporting multiple clients on shared platform infrastructure

- Developed data management policies and procedures ensuring data quality, security, access controls, and compliance—collaborated cross-functionally with data engineering teams and client stakeholders

Tidal Wave Analytics LLC
Consulting Data Scientist

2023 – Present

Saratoga Springs, NY

- Architected and delivered production data platform on AWS Databricks for Paradigm, designing scalable data pipelines that ingest data from multiple enterprise sources, standardize features, and deliver predictions to operational workflows
- Built data acquisition and curation infrastructure for Denari, implementing automated ingestion from external government sources (IRS, state tax authorities), data cleansing and standardization pipelines, and document management platform
- Developed full-stack software platform (Escalators puzzle game) demonstrating hands-on technical leadership— designed and implemented backend data pipelines (Python), frontend application (React/Node.js/Vite), authentication (Google OAuth), and cloud data management (Supabase)

Takeda Pharmaceuticals
Associate Director, Digital & Data Science

2021 – 2022

Lexington, MA

- Led engineering and data operations teams (3-7 engineers, data scientists, and analysts) responsible for digital platforms and data science capabilities supporting manufacturing and quality operations
- Architected and delivered Big Data solutions for large-scale manufacturing data, designing data pipelines, data warehouses, and analytics platforms processing real-time and batch data from enterprise systems
- Served as technical leader and platform administrator for Spotfire—owned architecture decisions, data modeling, ETL processes, integrations with enterprise data sources, security controls, and platform governance
- Drove technical architecture decisions for predictive ML models deployed in production, overseeing full development process from data acquisition through deployment, monitoring, and optimization
- Implemented data governance principles, data quality standards, and data management procedures ensuring data integrity, security, and regulatory compliance in GxP environment
- Hired, developed, and mentored high-performing team, fostering culture of technical rigor and cross-functional collaboration

Regeneron Pharmaceuticals
Senior Process Data Scientist

2016 – 2021

Rensselaer, NY

- Architected automated data pipelines for acquisition, cleansing, standardization, and quality checking of manufacturing data from multiple enterprise sources—implemented ETL processes ensuring high-quality, analytics-ready datasets
- Built and delivered data products including automated limit calculations, feed optimization models, and quality prediction systems—owned full development lifecycle from requirements through production deployment
- Designed data models and data warehousing solutions supporting operational reporting and advanced analytics, implementing data governance, lineage tracking, and audit trails
- Collaborated with QA, Manufacturing, IT, and cross-functional teams in Agile environment to deliver data products that improved operational efficiency and product quality

EDUCATION

Doctor of Philosophy (PhD) in Mathematics

2014

Virginia Polytechnic Institute & State University

Dissertation: Optimization and control methods for agent-based models in biological systems. Research involved designing computational architectures, implementing scalable data processing pipelines, and developing algorithmic solutions.

SKILLS & TECHNOLOGIES

Healthcare Reference Data: HCP/HCO Profile Management • Healthcare Professional Data • Healthcare Organization Data • Affiliation Tracking • Data Acquisition from Healthcare Sources • Healthcare Data Quality • Healthcare Data Governance

Data Platform & Cloud Architecture: AWS (S3, Databricks) • Snowflake • Databricks • Azure • Data Lake Architecture • Big Data Solutions • Scalable Platform Design • Cloud Data Warehouses

Data Engineering & Operations: ETL/ELT Processes • Data Pipelines • Data Acquisition & Ingestion • Data Cleansing & Standardization • Data Quality Management • Data Modeling • Data Warehousing • Master Data Management

Data Governance & Compliance: Data Governance Frameworks • Data Management Policies • Data Quality Standards • Data Security & Access Controls • Regulatory Compliance (FDA, 21 CFR Part 11) • Data Integrity • Metadata Management

Technical Leadership & Development: Platform Architecture • Technical Decision Making • Hands-on Development • Python (Advanced) • SQL • API Design • System Integration • Full-stack Development (React, Node.js)

Team Leadership & Collaboration: Engineering & Data Ops Team Leadership • Team Building (5+ direct reports at Gilead) • Hiring & Development • Technical Mentorship • Cross-Functional Collaboration • Agile Development • Vendor Management

PRESENTATIONS & PUBLICATIONS

- CHPA Regulatory, Scientific & Quality Conference (2025) — Solo Presenter: The Impact of AI on FDA-Regulated Industries
- Redica Systems Webinar (2025) — Solo Presenter: From Reactive to Proactive: Leveraging AI/ML to Improve the Quality Unit

PUBLICATIONS

- "Optimization and control of agent-based models in biology: a perspective" — Bulletin of Mathematical Biology, 2017
- "A computational model of invasive aspergillosis in the lung and the role of iron" — BMC Systems Biology, 2016