

Matt Oremland, PhD

Senior Risk Analytics Leader

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PROFESSIONAL SUMMARY

Analytics leader with 9+ years of pharmaceutical experience architecting production data solutions and translating complex technical concepts into executive strategy. Deep expertise in modern data platforms (Snowflake, Databricks), advanced analytics, and machine learning applied to risk detection and regulatory intelligence. Proven track record designing enterprise analytics architectures, influencing C-suite decision-making, and building sophisticated models that identify systemic vulnerabilities in FDA-regulated environments.

PROFESSIONAL EXPERIENCE

Redica Systems

April 2025 – Present

Director, Data Strategy & Analytics

Remote

- Architect production analytics solutions for pharmaceutical clients including Eli Lilly, serving as technical owner for FDA Form 483 regulatory intelligence platform that identifies emerging compliance risks through automated monitoring
- Design and implement enterprise risk-scoring models from scratch using Python and Snowflake, establishing data governance frameworks and CI/CD deployment patterns for production systems
- Built production LLM classifier using OpenAI API that reads unstructured FDA enforcement text and assigns severity levels and weighted risk categories, owning prompt engineering, validation frameworks (confusion matrices), and production accuracy monitoring
- Translate sophisticated technical architectures into strategic recommendations for C-suite audiences, presenting horizon scanning capabilities and risk mitigation strategies at industry conferences (CHPA, ISPE)
- Lead technical discovery sessions with risk domain experts to translate ambiguous business requirements into concrete data models and solution designs

Tidal Wave Analytics LLC

January 2025 – Present

Consulting Data Scientist

Saratoga Springs, NY

- Architect and deploy production machine learning solutions on Databricks for enterprise clients, coordinating with data engineering teams on pipeline orchestration and automated testing frameworks
- Built quote fingerprinting random forest model for Paradigm that runs nightly in production, establishing performance monitoring and model governance workflows
- Developed full-stack analytics application (Escalators puzzle game) with Python backend, React frontend, and Supabase data infrastructure, demonstrating end-to-end solution ownership from architecture to deployment
- Designed RAG system for tax compliance using HuggingFace and PyTorch to query regulatory documents and generate filing recommendations, applying NLP techniques to unstructured legal text

Gilead Sciences

January 2023 – March 2025

Director, Data & Analytics (Medical Affairs)

Foster City, CA

- Co-owned enterprise data analytics technology roadmap for Medical Affairs organization, coordinating priorities across stakeholder groups and presenting strategic recommendations to VP-level leadership
- Architected centralized data lake as single source of truth for healthcare reference data, designing lakehouse organization strategies and implementing data governance frameworks that improved data quality by 40%
- Led technical discovery and requirements gathering for analytics initiatives, translating business needs from senior leadership into scalable technical solutions using Spotfire and cloud infrastructure

- Established technical standards for data modeling, documentation, and solution validation across team of 5 developers, conducting architecture reviews to ensure enterprise-grade quality

Takeda Pharmaceuticals

May 2021 – December 2022

Associate Director, Digital & Data Science

Lexington, MA

- Led predictive modeling initiatives using machine learning for manufacturing and quality risk detection, applying ensemble methods, classification, and time series forecasting to identify process vulnerabilities
- Served as Spotfire system administrator and technical architect, designing BI solutions with performance optimization patterns and establishing deployment workflows across enterprise
- Presented data-driven insights and recommendations to C-suite executives during semi-annual APQR meetings, translating sophisticated analytics into strategic business value and risk mitigation priorities
- Authored technical documentation including solution architecture diagrams, data models, and development guides that enabled knowledge transfer and team scalability

Regeneron Pharmaceuticals

May 2016 – May 2021

Senior Process Data Scientist

Rensselaer, NY

- Designed and built production analytics solutions for biopharmaceutical manufacturing using Python, implementing automated data pipelines with ETL/ELT patterns and medallion architecture principles
- Developed sophisticated predictive models using ensemble methods, PLS, and PCA that identified systemic process risks and optimized feed quantities, resulting in measurable operational improvements
- Led technical problem-solving for analytics challenges across cross-functional teams, serving as go-to technical resource and establishing coding standards through example solutions
- Presented feed optimization project findings to senior leadership that changed business decisions, demonstrating ability to connect technical capabilities to strategic business outcomes

EDUCATION

Doctor of Philosophy (PhD) in Mathematics

2014

Virginia Polytechnic Institute & State University

Dissertation on optimization and control of agent-based models in biological systems using multi-objective optimization and evolutionary algorithms

SKILLS & TECHNOLOGIES

Analytics Platforms & Architecture: Snowflake • Databricks • Microsoft Azure • AWS • Lakehouse Architecture • CI/CD Pipelines • Data Governance Frameworks

Programming & Data Engineering: Python (Advanced) • SQL • ETL/ELT Development • Data Modeling • Pipeline Orchestration • Version Control

Business Intelligence & Visualization: Spotfire (System Admin) • Sigma • Dashboard Design • Executive Storytelling • Performance Optimization

Machine Learning & Advanced Analytics: Scikit-Learn • TensorFlow • PyTorch • Classification • Regression • Ensemble Methods • Time Series Forecasting • NLP • LLM Integration (OpenAI API)

Risk & Regulatory Intelligence: Risk Detection Models • Regulatory Monitoring • FDA Compliance Analytics • Quality Analytics • Horizon Scanning

Leadership & Communication: Executive Communication • Technical Mentorship • Architecture Reviews • Strategic Roadmap Development • Cross-Functional Partnership

PRESENTATIONS & PUBLICATIONS

- CHPA Quality and Manufacturing Meeting (2025) — Solo Presenter: Decoding FDA Enforcement Trends in OTC and Dietary Supplements

- ISPE Annual Meeting & Expo (2025) — Solo Presenter: Navigating FDA Compliance - Outsourcing Facility Inspections
- 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
- "Optimization of agent-based models: scaling methods and heuristic algorithms" — Journal of Artificial Societies and Social Simulation, 2014