Jessica Danielle Geiger

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Data Scientist | Drug Discovery & Machine Learning (Life Sciences)

Master's-trained Data Scientist with a background in human physiology and experience in pharmaceutical R&D. Specialized in applying machine learning to biological and chemical data, including predictive modeling for drug discovery. Experienced in building end-to-end data pipelines, feature engineering molecular data, and deploying models via interactive applications.

TECHNICAL SKILLS

- Programming & Data: Python, R, SQL, Pandas, NumPy, Git/GitHub, scikit-learn, TensorFlow
- Machine Learning & Statistics: EDA, statistical analysis, data validation, preprocessing, regression, classification, ensemble methods, feature selection, PCA
- Visualization Tools: Streamlit, Excel, Quarto, matplotlib
- Cloud Tools: AWS EC2, S3, Athena

EXPERIENCE

Aromas-San Juan Unified School District – Substitute Teacher (Aug 2023 – Present)

- Designed and delivered curriculum tailored to diverse learning levels, ensuring comprehension of key concepts across subjects
- Assessed student understanding through formative evaluations and adapted instruction to improve learning outcomes
- Collaborated with faculty and staff to maintain continuity of instruction and support a positive classroom environment
- Strengthened organizational, classroom management, and problem-solving skills in dynamic, fast-paced settings

AstraZeneca – Associate, R&D (Sep 2022 - Jun 2023)

- Supported biologic drug formulation in a cGMP environment, contributing to batch production used in clinical trials
- Maintained and analyzed batch data, process parameters, and quality metrics to ensure consistency, regulatory compliance, and reproducibility across production runs
- Monitored and evaluated spray-drying operations, identifying relationships between process variables and product outcomes to improve formulation performance and stability
- Collaborated with directors and process engineers to troubleshoot process variability and meet target specifications, enabling development of a safe and effective formulation for clinical trial use

PROJECTS

CGRP Drug Discovery Capstone Project (Github)

- Developed an end-to-end machine learning pipeline to predict small molecule inhibitory activity (IC50) against the CGRP receptor using bioactivity data from ChEMBL
- Engineered 800+ molecular fingerprint features and applied variance threshold feature selection and PCA
- Built a reproducible preprocessing pipeline and deployed a Streamlit application for real-time predictions

EDUCATION & CERTIFICATIONS

- AWS Certified Cloud Practitioner
- M.S. Data Science – Eastern University (2025)
- B.S. Human Physiology (Minor: Biochemistry) – University of Oregon (2020)