**Jake Feigum**

Data Science | Analytics

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**MOTIVATION**

I am passionate about **solving business problems** using Data Science & Analytics. I systematically & creatively use my skillset to **add tangible value** to the team, the business, and the end-user. I am constantly **learning**, and always looking to improve.

**SKILLS & TOOLS**

**Programming:** SQL, Python (Base, Pandas, Numpy, Matplotlib, Scikit-Learn)

**Tools:** Excel, Tableau, Github, AWS (S3, Lambda, IAM, EC2, SageMaker, RDS, DynamoDB, Glue)

**Math:** Linear Algebra, Statistics (Hypothesis Testing, AB Testing, Central Limit Theorem, Distributions)

**Machine Learning:** Linear Regression, Logistic Regression, Decision Trees, Random Forest, KNN, k-means, PCA, Association Rule Learning, Causal Impact Analysis, Neural Networks

**PROJECTS**

**Grocery Delivery Optimization**

* Created & applied a **Genetic Algorithm in Python** to search out a near-optimal route across 10 addresses. This lead to estimated **savings of up to 50%** in both delivery time and fuel consumption over a route based upon transaction order alone. This approach could be utilized across many industries as a way to find more optimal solutions.

**"You Are What You Eat" Customer Segmentation**

* Used **k-means clustering** on grocery transaction data to split out customers into distinct "shopper types". These could be used to better understand customers over time, and to more accurately target customers with relevant content & promotions

**WORK EXPERIENCE**

**Senior Validation Engineer,** PSC Biotech (Dallas-Fort Worth Metroplex) April 2023 – July 2025

* To help plan for new line and equipment installation at a customer plant, I organized and analyzed equipment data to predict protocol development estimate times using Excel. This led to more accurate estimates for project staffing needs and eliminated unnecessary hiring for project support.
* To improve product throughput and reduce product mix-ups, led a validation project to install a rework station at Alcon plant. Collaborated with Automation teams to troubleshoot and configure the new system, saving 20% in pre-validation configuration time. Installation of the new station increased product throughput by 25%.
* Led end-to-end equipment and process validation at MilliporeSigma plant, reducing deviation resolution time by 15%.

**Validation Engineer/Specialist,** PharmEng Technology (Fort Worth, Texas) Sep 2018 – Nov 2022

* Led implementation and validation of new software labeling system, Loftware, across numerous Alcon sites. Reduced manufacturing downtime due to labeling errors by 30%.

**WORK EXPERIENCE (CON’T)**

**EDUCATION**

**BSc (Industrial Engineering)** 2005 - 2009

*University of Texas at Arlington*

**COURSES, CERTIFICATES AND QUALIFICATIONS**

**Data Science Professional Certification** July 2025 - Present

*Data Science Infinity*

* **Actionable Learnings:** Extracting & manipulating data using SQL. Application of statistical concepts such as hypothesis tests for measuring the effect of AB Tests. Utilising Github for version control, and collaboration. Using Python for data analysis, manipulation & visualization. Applying data preparation steps for ML including missing values, categorical variable encoding, outliers, feature scaling, feature selection & model validation. Applying Machine Learning algorithms for regression, classification, clustering, association rule learning, and causal impact analysis for measuring the impact of an event over time. Machine Learning pipelines to streamline the ML pre-processing & modelling phase. Deployment of an ML pipeline onto a live website using Streamlit. Using Tableau to create powerful Data Visualizations. Turning business problems into Data Science solutions.