Alex Rosenblum *(he/him)*

Chicago, IL | arosenblum1@gmail.com | Portfolio (GitHub) | LinkedIn

Driven and passionate data scientist with a history of project success and a diversity of experience on teams of all sizes in corporate, startup, and nonprofit environments.

Education

Data Science, MS | DePaul University | June 2024
Chemistry, BA I University of Iowa | Spring 2016

Work Experience

Data Analyst, Research & Evaluation
Rotary International | Evanston, IL
May 2023 - Present

- Fielded a diverse array of internal research requests from various teams across the organization, utilizing internal data to answer questions regarding such topics as convention experience, youth exchange programs, grant fund disbursement, and club incentive structures, among others, often presenting findings to a mix of technical and non-technical professionals on cross-functional teams.
- Routinely interfaced with a legacy database via SAP BusinessObjects to synthesize datasets from a collection of unconnected sources and organize them for analysis.
- Pioneered a model-based approach to survey response analysis by implementing and interpreting a decision-tree model to discover emergent segments of Rotary International Convention attendees.
- Built, trained, and deployed a tree-based ensemble classification model to predict annual membership termination at the individual level with >70% precision, including data sourcing, data wrangling, and feature engineering.
- Conducted an analysis on the trends in club participation in global grants and presented findings at an organization-wide research summit.

Scientist I, R&D *(Contractor)*
Abbott Laboratories Diagnostics Division | Abbott Park, IL
March 2021 - December 2022

- Created a series of visualizations to model experimental and hypothetical calibration curves, informing next steps in the design of a photometric clinical chemistry assay.
- Designed and executed experiments to test various performance aspects of diagnostic assays in development.
- Routinely analyzed experimental data and presented key insights to both technical and non-technical audiences on cross-functional teams.

Analytical Chemistry Lead
Back of the Yards Algae Sciences (BYAS) | Chicago, IL
September 2019 - February 2021

- Designed analytical methods, extraction processes, and data analysis plans to evaluate the results of experiments in biostimulation technology.
- Managed lab supply ordering, inventory, lab cleanliness, lab safety enforcement, instrument installation, maintenance scheduling, and personnel training in a fast-paced, dynamic startup environment.

Associate Scientist, Design Verification *(Contractor)*
Abbott Laboratories Diagnostics Division | Abbott Park, IL
August 2017 - August 2019

- Reviewed experimental material stability data, interpreted outputs generated by the internal data management system, and verified that experimental data conformed to specifications outlined in study protocols.
- Conducted investigations into instances of nonconformance, often drilling down into data to help identify root cause.

Oligonucleotide Production Specialist *(Contractor)*
Luminex Corporation | Northbrook, IL
January 2017 - June 2017 (6 months)

QC Laboratory Technician *(Seasonal Temp)*
Sherwin-Williams | Chicago, IL
August 2016 - December 2016 (5 months)

Technical Skills

Data Analytics, Machine Learning, Data Visualization, Big Data, Classification Algorithms, Supervised Learning, Clustering Algorithms, Unsupervised Learning, Regression Analysis, Natural Language Processing (NLP), Artificial Neural Networks (ANN), Statistical Analysis, ANOVA, Feature Engineering, Data Processing, Data Cleaning, Data Wrangling, Experimental Design

Software/Programming Languages

- **SQL**: Oracle, MySQL, PostgreSQL
- **Python**: NumPy, Pandas, Matplotlib, Seaborn, Scikit-Learn, TensorFlow, Keras, SciPy, JupyterLab, Spyder
- **R**: ggplot2, dplyr, tidyr
- **Distributed Platform**: AWS, Hadoop, Hive, Pig, HBase, Spark, Storm
- **Dashboarding:** Tableau, PowerBI, SAP BusinessObjects

Academic/Independent Projects

Analysis and Optimization of an Automated Hydroponic Vertical Farm – *June 2023*

- Used Python to build and implement a pipeline to process a dual-feed data stream from an Internet of Things network of sensors and pumps into a tidy rectangular format for visualizing, monitoring, and modeling.
- Leveraged time-series data collected in prototype phase to build a suite of regression models to estimate the piecewise contribution of each additive to the system's overall conductivity to inform nutrient dosage decision-making and forecast expected outcomes.
- Designed and executed scientific experiments to generate data for the aforementioned model.

Visualizing Music with Spotify's API – *January 2023*

- Constructed exploratory visualizations for 8 years of personal Spotify listening history with Tableau, discovering my Top 25 Artists over all time as well as Top 5 Artists in each year through a dashboard of linked bar and line graphs.
- Pulled data describing track-by-track audio features like danceability and energy for certain top albums and artists using Spotify's Web API
- Used Seaborn to create a series of visualizations exploring the audio profiles of certain albums and artist discographies.

Cluster Analysis of Billionaires – *March 2021*

- Used R programming to apply K-Means and DBSCAN clustering algorithms to analyze a dataset of the world's billionaires compiled and published by the Peterson Institute for International Economics in 2014.
- Engineered features to include data from multiple time points to minimize information loss without necessitating a time-series analysis.

Performing NLP on Fox News Newsletters – *November 2020*

- Used R Programming to apply the NLP techniques TF-IDF and VADER Sentiment Analysis to analyze a corpus of newsletters sent by a handful of Fox News publications.
- Employed Principal Components Analysis and Linear Discriminant Analysis on the NLP outputs to characterize the difference in Fox News' messaging trends before and after the start of the COVID-19 pandemic.

Regression Analysis of Chicago's Air Quality during the COVID-19 Pandemic – *June 2020*

- Used SAS programming to apply Simple Regression Analysis to quantify the change in Chicago's air quality due to traffic reduction caused by the shelter-in-place order issued at the onset of the pandemic.
- Reviewed literature to self-educate on the domain of air quality and wrote a summary of the research, with references, to introduce the project.