



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I am passionate about combining descriptive analytics with results-oriented data problem solving and bridging the knowledge gap across multiple disciplines and presenting insights/results to different audiences and teams.

## Skills

### PROJECT MANAGEMENT

Scoping out Business Problem  
Defining Project Success  
Metrics Development  
Defining KPI's  
Team-Player  
Cross-Discipline Collaboration  
Insights to Stakeholders

### LANGUAGES

SQL  
MongoDB  
Python  
R

### DATA WRANGLING

Data Cleaning  
Data Exploration

### STATISTICS

Descriptive Statistics  
Probability Statistics  
Inferential Analytics  
Hypothesis Testing  
A/B Testing

### MODELS / MACHINE LEARNING

Linear Regression  
Logistic Regression  
Decision Trees  
Random Forests  
Naive Bayes Classification  
K-Means Clustering  
Natural Language Processing (NLP)

### BUSINESS ANALYTICS

Cohort Analysis  
Time Series Analysis  
Churn Prediction

### VISUALIZATION

Matplotlib  
Bokeh  
Plotly  
Folium  
Tableau  
Power BI

# MINDY NG

## DATA ANALYST

## Projects

### Modern Analytics Data Stack Built from Scratch

Built from the ground up and maintaining- data pipeline to perform ELT and BI visualization layer. Stack included open source: Meltano, dbt and Superset.

Feb. 2021 to Feb. 2021

### Music Streaming Service Churn Prediction

543,705 samples of user data used to investigate what leads to churn and to predict its occurrence.

Jan. 2021 to Jan. 2021

Best model (Logistic Regression) had f1-score of 0.5 for minority class.

Model can be used to foresee which customers are likely to cancel their subscription so business can intervene to maintain high revenue stream.

### Healthcare Workers' Burnout Classifier

Scraped 1879 tweets from nurses on the front lines in order to build a sentiment classifier to predict burnout.

Jan. 2021 to Jan. 2021

Best model (LSTM) had f1-score of .51 for minority class before deployment using Streamlit.

Web application can be used for hospital directors to intervene on burnout to sustain healthcare workforce.

### Time Series Forecasting on Uber Eats' Vendors

Dec. 2018 to Dec. 2018

Utilized 7,911 samples of date-stamped data and predicted which vendors were worth continuing business with based on ROI.

Trended each vendors' data with Facebook's Prophet. Trends performed over a span of 15 months. Data further broken down into weekly and daily trends. Resulting model performance based on 30-day horizon producing 0.01 - 0.03 RMSE.

### Postmates New Market Analysis with Geospatial Heatmaps

Mar. 2019 to Mar. 2019

Analyzed 3-sided market to explore contributors to conversion and churn, used heatmaps to visualize supply and demand, determined health of market and addressed data integrity issues.

### TaskRabbit Two-Sided Market Analysis - Supply and Demand Optimization

May 2019 to May 2019

Utilized 30,000 samples of date-stamped recommendations to Clients to predict what sort of Tasker is usually chosen.

Used Decision Tree and Random Forest Tree models to predict whether or not a Tasker would be hired. Resulting model performance based on 30-days of data for Random Forest was 0.943 Accuracy.

Utilized 30,000 samples of market data to build a model that suggests hourly rates.

Trended each Task category with Facebook's Prophet. Trends performed based on 30 historical days and broken down into yearly, weekly and daily predictions. Resulting model based on 6-month horizon produced 12.7-13.7 RMSE.

### Sentiment Classification on Amazon Book Reviews

Feb. 2017 to Apr. 2017

Gathered 243,269 Amazon book reviews through UCI's Machine Learning Repository in order to label customer reviews with three different sentiment scores to allow efficient product assessment.

Built three different classification models- MN Naive Bayes, Decision Tree and Random Forest.

Out of the three, Random Forest was the best predictor due to having best model performance results with 0.72 Test Set Accuracy. Reclassifying Amazon product reviews prevents shopping paralysis leading to quick purchase conversions.

### Medicare Prescription Drugs Analysis

July 2019 to July 2019

Analyzed 25,209,130 samples of Medicare Part D Prescription use to determine how geography correlates with provider density, provider specialties and drug costs.

Plotly and Seaborn used to visualize number of providers across states, to geocode provider specialties and to examine differing degrees of drug cost variance across the U.S.

### Cohort Analysis on Drugs for Cancer Patients

Jan. 2019 to Jan. 2019

Examined 1,096 samples of de-identified cancer patient treatment data to predict best drug regimen for cancer clinic's cohort.

Utilized paired t-test to determine if there was difference in efficacy between two different Breast Cancer drugs.

### Fitbit Calories Burned Measurement Prediction

May 2017 to Aug. 2017

Gathered 91 quantified self data points through Fitbit's API. And with 6 meaningful calorie measurements, determined which activity was the best to invest in to achieve the highest calorie burn.

Built three different regression models- Linear Regression, Decision Tree and Random Forest.

Out of the three, Linear Regression was the best predictor with relatively the lowest RMSE values with 0.7 for Test set results. Completing analysis on self-quantifying data provides new dashboard metric for health conscious Fitbit users.

## Employment

### Forethought

Implementation Engineer

San Francisco, CA  
July 2020 to Sept. 2020

On the Customer Experience team, leading all technical requirements and touching all aspects of the business: Engineering, Product, Sales and Customer Success.

Implemented: State-of-the-art NLP models to help clients be geniuses at their job

Involved: Data Engineering, Data Science, Machine Learning/Artificial Intelligence, Business Intelligence -- owning whole data pipeline Post-Sale

-Queried MongoDB to create customer business rules.  
-Designed AI Training datasets to feed into XLNet and BERT models using Jupyter Python notebooks.  
-Analyzed trained models' performance to deploy best automated NLU models for clients.  
-Verified live models' predictions were successful via API calls to clients' Salesforce Help Desks.  
-Reduced client's SPAM from 64% to less than 1%.  
-Helped save client >\$20,000 in human labor cost from Customer Support Agents manually labeling tickets.  
-Completed data analysis that contributed to signing of >\$400,000 deal with major grocery-tech client.

### Immuno Concepts

Quality Control Analyst

Sacramento, CA  
July 2010 to Apr. 2019

-Built linear regression models to determine whether or not products were drifting from quality.  
-Tracked trends and outliers to make manufacturing recommendations to management to create efficiencies and increase profit margins.  
-Created product performance reports to drive key business investments for following quarter.

### University of California, Davis

Research Associate

Davis, CA  
Jan. 2005 to Dec. 2008

-Through repeated experimentation explored sigma70 subunit architecture to characterize macromolecular complexes involved in transcription of growth-related genes.  
-Narrowed down which protein chain substitution in antibody-derived proteins fit best with research aims in pre-targeting radioimmunotherapy for Non-Hodgkin's Lymphoma.

## Volunteering

### CoronaWhy

Machine Learning Engineer

Helping to fight against Coronavirus.

CoronaWhy is a globally distributed, volunteer-powered research organisation of 1000+ members. We're using DS and AI to assist the medical community and policy makers answer key questions related to COVID-19. It's supported by Google, Amazon, NASA and other companies.

I am embedded within the Vaccine/Therapeutics Task team, helping the Paper Study Classification group build baseline models to filter papers based on study design.

## Education

Springboard, Data Science Career Track

Jan. 2017 to Dec. 2017

University of California, Davis  
Genetics Bachelor's of Science

Sept. 2003 to Dec. 2007