

PATRICK BOVARD

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Skills

PROGRAMMING

Python
SQL

WEBSCRAPING

BeautifulSoup
Selenium

DATA TOOLS

Numpy
Pandas
Scikit-learn
Minitab
NLTK

DATA VISUALIZATION

Matplotlib
Seaborn
Tableau

OTHER

HTML
Git
Microsoft Excel
Six Sigma/Lean
Microsoft Word
Microsoft Powerpoint

SUPERVISED MACHINE LEARNING

Linear Regression Modeling
Classification Modeling
Model Cross Validation and Selection

DATABASES

PostgreSQL
SQLAlchemy

CERTIFICATIONS

Certified Quality Improvement Analyst
Certified Quality Process Analyst

UNSUPERVISED MACHINE LEARNING

Clustering
Dimensionality Reduction

NATURAL LANGUAGE PROCESSING

Topic Modeling (NMF, LDA, LSA)
Sentiment Analysis
TF-IDF and Count Vectorization
Text Preprocessing

Experience

Metis

Data Scientist

Chicago, IL
Jan. 2021 to Current

Completed Metis's 12-week immersive data science bootcamp, building project-oriented skills. Focused on Python programming, supervised and unsupervised machine learning, data visualization, project design, and communication. Projects completed include:

MLB Pitch Predictor:

- Built a machine learning pipeline to predict pitch type and location from a given MLB pitcher, using previous pitch rates, situational factors, hitter types, and other features
- Utilized classification and linear regression in conjunction to predict the pitch type and pitch location, developing models for over 50 individual pitchers from the 2015-2019 MLB seasons

Analyzing Presidential Debates:

- Utilized Natural Language Processing and topic modeling techniques to analyze presidential debate transcripts from 1960 to present, scraping available transcripts for all General Election and Primary Election Debates
- Uncovered several debate topic trends in topics over time, and identified areas successful Republican and Democratic candidates focused on in primaries to secure party nominations

Predicting Hong Kong Horse Racing Results:

- Developed a classification model to predict whether or not a horse would finish in the top 3 positions of the race they are in, using an XGBoost classification model
- Engineered several new features engineered in SQL, including rolling averages of past performance and how a horse compared to the other horses in the race field
- Final model predicted horses to finish in the top 3 with a precision of 59.1%, an increase of over 30% from utilizing the initially gathered data with no feature engineering

Predicting Baseball Player Offensive Success:

- Built a linear regression model using Major League Baseball Statcast batted ball data to predict offensive success via the weighted runs created plus (wRC+) statistic
- Scraped data from BaseballSavant and FanGraphs to use in the model from the 2015-2020 seasons, iterating through multiple model designs until arriving at a final model with optimal interpretability

MTA Traffic Data:

- Analyzed New York City MTA traffic data to determine optimal station placement for a non-profit organization street team to maximize petition signatures
- Collaborated with a team to develop a recommendation for street team placement, including daily schedules and utilizing special event bursts in traffic, like game days

Medline Industries, Inc.

Quality Assurance Engineer II

Chicago, IL
May 2016 to Dec. 2020

- Spearheaded quality responsibilities within the Medline Urology division on new product development, developing test plans, meeting FDA requirements, and supplier evaluations
- Drove a 40% increase in processing cycle efficiency by developing an Excel tool to determine capital equipment warranty status
- Analyzed data from multiple sources, such as customer complaints, to implement and execute Corrective and Preventative Actions both internally and externally to improve product performance and customer satisfaction
- Developed new metrics to optimize analytical insights into product performance over its expected lifetime to provide recommendations to the product management team

VisMed*3D

Biomedical Engineering Intern

Chicago, IL
June 2015 to Aug. 2015

- Worked on various projects, including medical models and custom parts/projects, using FDM and SLA printing technologies and CAD modeling
- Collaborated on developing a 3D printing curriculum for elementary and middle school students
- Drafted a process outline and workflow for corporate use for various types of projects
- Consulted with clients to come up with creative and customized solutions to their projects

Scheck and Sires / Advanced O&P Solutions

Engineering Intern

Hickory Hills, IL
May 2014 to Aug. 2014

- Digitized casts and carved out molds for prosthetic and orthotic devices using CAD and CAM technology
- Drafted standard fabrication forms to streamline the manufacturing process between the clinic and manufacturers, conducted time trials for process analysis, edited clinical forms, and assisted in minor IT work
- Aided in fabricating, laminating, and wiring devices for interactive STEM exhibit on prosthetics and orthotics on display at local university

Education

Washington University in St. Louis

Bachelor of Science Biomedical Engineering 2016
Minor in Mechanical Engineering

Aug. 2012 to May 2016