

# PATRICK LEE

## SR. DATA SCIENTIST

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## Skills

### LANGUAGES / LIBRARIES

SQL  
Python  
PySpark  
Pandas  
NLTK  
NumPy  
RegEx  
BeautifulSoup  
Scikit-learn

### MACHINE LEARNING

Gradient Boosting  
Random Forests  
Natural Language Processing  
Linear Regression  
Logistic Regression

### VISUALIZATIONS

Matplotlib  
Seaborn  
Tableau  
Power BI

### DATA MANAGEMENT

Git / Github  
Databricks  
Snowflake  
SQL Server Management Studio  
AWS  
Excel

## Actuarial Exams

Exam P/1 - Probability  
Exam FM/2 - Financial Mathematics  
Exam MFE/3 - Models for Financial Economics

## Experience

### CVS Health Senior Data Scientist

New York, NY  
Jan. 2023 to Current

- Designed a time series forecasting tool to predict digital prescription sales. Delivered insights to guide digital adoption strategies for end-of-year goals
- Applied propensity score matching to evaluate the impact of digital adoption on engagement, in-store performance metrics, call volume, and customer satisfaction
- Developed a classification model for patients with upcoming prescriptions to optimize outreach timing and relevance. Boosted conversion by 54% while targeting higher-value patients holding 30% more scripts
- Conducted snap test experiments using control and test groups to rank the effectiveness of various outreach verbiages
- Leveraged LightGBM Regressor to estimate prescription pick-up times to be displayed in the digital app, reducing late scripts from 20% to 5%

### Affinity Health Plan / Molina Healthcare Data Scientist / Data Analyst

New York, NY  
May 2019 to Dec. 2022

- Coordinated with payment integrity team to design a GBM model to identify fraud and capture overpayment to providers. Provided total recovery opportunity of \$1.4M in first 6 months of deployment
- Reverse engineered model to calculate risk adjusted loss ratios and identify profitable contracts. Built ETL pipeline in SQL to replace dependency on external actuarial consulting firm and save \$100,000+ YoY
- Provided ad hoc data analysis and automated dashboard tools in Power BI and Tableau

### Metis (Kaplan, Inc.) Data Science Teaching Assistant and Fellow

New York, NY  
Jan. 2019 to Apr. 2019

- Guided students in the machine learning pipeline of their unique project datasets, including data acquisition, EDA, data cleaning, and statistical modeling using Python and SQL programming
- Designed a comprehensive data science course plan around statistics and probability

### The Hartford Financial Services Group, Inc. Senior Actuarial Analyst

Hartford, CT  
May 2016 to Dec. 2018

- Applied actuarial experience analysis to provide efficient risk adjusted pricing and bring profitability to 12 states
- Analyzed loss data and identified key trends to improve market segmentation
- Presented actuarial analysis to the Department of Insurance to approve 20+ rate changes designed towards profitable growth

## Personal Projects

### NBA All-Star Votes Predictor

Efficiently scraped and wrangled 20+ years of NBA data (using BeautifulSoup and pandas) and applied linear regression to determine how player's stats can predict All-Star vote counts

### E-commerce Product Repurchasing Classifier

Feature engineering product/member data for Instacart, I applied tree-based algorithms to classify whether a customer will repurchase a given product

### "The Office" Character Relationship Episode Recommender

Built a recommendation system app using character lines from *The Office* to find episodes based on any two-pair character relationship using NLP and cosine similarity

### Codenames AI Bot (The Perfect Partner)

Leveraged Gensim's Word2Vec to train a neural net bot that can play *Codenames* with human partners using word embeddings from their personal Facebook Messenger data

## Education

New York University  
B.A. Major: Economics, Minor: Business Studies

Sep. 2009 to May 2013