

# PATRICK LEE

## DATA SCIENTIST

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## Actuarial Exams

Exam P/1 - Probability

Exam FM/2 - Financial  
Mathematics

Exam MFE/3 - Models for  
Financial Economics

## Skills

### LANGUAGES AND LIBRARIES

Python  
SQL  
NLTK  
spaCy  
Scikit-learn  
Pandas  
NumPy  
RegEx  
BeautifulSoup  
Bash

### MACHINE LEARNING

Gradient Boosting  
Random Forests  
Natural Language Processing  
(NLP)  
Linear Regression  
Logistic Regression  
Unsupervised Learning  
(Clustering)  
Dimensionality Reduction

### VISUALIZATIONS

matplotlib  
seaborn  
Tableau  
Flask

### DATA MANAGEMENT

Amazon Web Services (AWS)  
Git / Github  
MongoDB  
Hadoop  
Spark  
SAS  
Excel  
Access  
Ratabase

## Experience

Metis

### Data Scientist

New York, NY  
Jan. 2019 to Mar. 2019

- Full-time ACCT-accredited immersive data science bootcamp. Five full-cycle projects from inception to execution, including data acquisition to analysis.
- Used machine learning and statistical modeling methods: linear regression, supervised learning and classification, unsupervised learning and clustering, natural language processing, deep learning.

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

Hartford, CT  
May 2016 to Dec. 2018

- Performed statistical and actuarial experience analysis on 12 states to determine adequate rate level
- Analyzed loss data and identified trends to provide accurate auto/home insurance premium rating for a given individual based on their risk factors
- Used databases in SAS and Access to prepare actuarial portions of financial statements for state insurance department filings and internal management reports
- Strategically presented proposals to the Department of Insurance and business partners in AARP. Provided clarification and solutions to their comments/objections (20+ filings approved)

### Korean American Medical Association Executive Director of KAMA

Englewood Cliffs, NJ  
Jan. 2015 to Mar. 2016

- Managed largest non-profit national organization representing Korean American physicians
- Coordinated 2015 Scientific Convention held in Seoul, Korea (63 speakers, up to 160 participants per session). Attendees included US Ambassador to Korea and the President of AMA
- Led a team of 31 medical student volunteers to streamline operations during the 5-day conference

### Animated Storyboards Operations Analyst

New York, NY  
June 2013 to July 2014

- Formatted and launched a series of Excel spreadsheets, used by the executive team, that easily calculated previously unknown company statistics such as company growth, company productivity, individual productivity, average time for posting/client feedback, and percentage of projects per month, per office, and per individual
- Effectively communicated with 8 studios worldwide to reallocate labor and meet 10+ deadlines a day
- Served as a liaison between directors, producers, and designers and delegated editing tasks to 200+ in-house animators to produce quality advertisements for the Super Bowl

### Muriel Siebert & Co., Inc. Economic Analyst Intern

New York, NY  
June 2012 to Aug. 2012

- Collected economic and financial data to be covered in our monthly client newsletter
- Prepared data into well-organized outlines to be used by the Chief Marketing and e-Business Officer
- Identified key facts within a vast number of publications (i.e., FT, WSJ, CNBC, Bloomberg, Reuters). Stayed on top of continuously publishing articles including those that were updated intraday

## Data Science Projects

### NBA All-Star Vote Calculator

Iteratively scraped and manipulated 20+ years of Basketball-Reference data (using BeautifulSoup and pandas) and applied linear regression to determine how player season stats can predict their All-Star votes.

### E-commerce Product Repurchasing Classifier

Using data from a major online grocery retail player, built an ML model with random forest and XGBoost algorithm to predict whether or not a customer will repurchase a given product.

### "The Office" Character Relationship Episode Recommender

Built a recommendation system app using character lines from the most popular show on Netflix to find episodes based on specific two-pair character relationships with NMF topic modeling and cosine similarity.

### The Perfect Partner ("Codenames" AI Bot)

Leveraged Gensim's Word2Vec to train a neural net bot that can play a popular game called Codenames with human partners using word embeddings from their personal facebook messenger data.

## Education

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

Sept. 2009 to May 2013