

# PRATHAP RAJARAMAN

## DATA SCIENTIST

## Experience

### Metis · New York, NY Data Scientist

July 2021 to Dec. 2021

- Completed a rigorous 20 week project-based program with training in exploratory data analysis, linear regression, web scraping, machine learning classification, natural language processing, and unsupervised learning ([see project section](#))

### MetLife · New York, NY Actuary

Mar. 2021 to Current

- Led system conversion for MetLife's Chile Life Insurance valuation model to PolySystems actuarial software.
- Built data pipeline and validated actuarial model to convert projected insurance cash flows into benefit reserves for MetLife's Chile business that conforms with new regulatory accounting reform (LDTI).

### New York Life · New York, NY Senior Actuarial Associate

May 2020 to Feb. 2021

- Led the efforts to conduct annual surplus testing for term life insurance new business and present findings to senior management.
- Demonstrated that an upcoming term product meets regulatory standards under various sensitivities in anticipation of a spring 2021 release

### Prudential Financial · Newark, NJ Associate Actuary (2019 - 2020)

Dec. 2017 to May 2020

- Project and validate quarterly asset/liability cash flows for Pension Risk Transfer business and present findings to management.
- Built tools to analyze changes in fixed income, alternative, and interest rate swap movements in our Pension Risk Transfer asset portfolio that affects the assumed discounting rate used in regulatory testing

### Senior Actuarial Associate (2017 - 2019)

- Coordinated efforts in implementing Prudential Annuities' annual actuarial assumptions update into the Annuities' valuation models. Built tools to conduct reasonability checks and quantify immediate and ongoing financial impacts from changes in assumptions such as lapse, mortality, and economic projections.
- Analyzed potential amortization strategies that will comply with new accounting regulations (FASB LDTI) and compared against existing methodologies for immediate and ongoing financial impact. Presented findings and made recommendations to senior management.

### General Reinsurance (GenRe) · Stamford, CT Actuarial Associate

July 2013 to Nov. 2017

- Led the implementation of Group Disability reserves to GGY-AXIS actuarial software. The migration allows the reserving team better insight into what reserve adjustments need to be made and enables the team to rate disability continuation risk more accurately.
- Built a model that incorporates the Dukes-MacDonald actuarial algorithm into pricing Post-Level Term policies. The model is currently used to more accurately price mortality, lapse, and premium rates for policyholders that wish to continue receiving insurance past the term period.
- Implemented enhancements to Gen Re Analytics, a predictive algorithm that has valued over \$5.7 billion of risk by tracking criteria such as smoker status, gender, issue age, and various health measures

## Projects

### Predicting Hit Songs using Machine Learning Classification

- Predicted whether or not a song would be a hit song based on audio features such as valence and tempo
- Trained multiple classification models such as logistic regression, XGBoost, and random forests to determine optimal fit. Fine-tuned model to achieve an F1 score of 82%

### Predicting NBA Player Salary using Linear Regression and Web Scraping

- Built and optimized multiple linear regression models (Ordinary Least Squares, Lasso, Ridge) to determine the most meaningful contributors to an NBA player's salary
- Web-scraped from basketball-reference via BeautifulSoup

### Building a Movie Recommendation System from Natural Language Processing

- Built multi-input content-based recommendation system that picks a movie a user may like based on previously liked films
- Leveraged dimensionality reduction techniques such as nonnegative matrix factorization and text preprocessing techniques such as lemmatization and TFIDF vectorization

### Exploratory Data Analysis with MTA Turnstile Data

- Analyzed the foot traffic of NYC subway stations via MTA turnstile data to determine which NYC neighborhoods warrant further infrastructure investment

## Awards

Associate in the Society of Actuaries (ASA)

Apr. 2016

## Contact

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## Education

### The Pennsylvania State University - University Park

B.S. Actuarial Science 2013  
Minor in Statistics

## Skills

### LANGUAGES AND LIBRARIES

Python  
Pandas  
Scikit-learn  
Numpy  
NLTK  
BeautifulSoup  
SQL

### MACHINE LEARNING

NLP  
Dimensionality Reduction  
Classification  
Regression  
Web Scraping

### DATA VISUALIZATION/ANALYSIS

Matplotlib  
Seaborn  
Tableau  
Microsoft Power BI  
PowerPoint  
VBA  
Excel  
Microsoft Access  
Plotly