**Mo Pei**

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**EDUCATION**

**Harvard University** Cambridge, MA

*Extension School, Graduate Certificate in Data Science & Machine Learning* GPA: 3.73/4.0 (9/2014-12/2016)

**Boston University** Boston, MA

*M.S. Actuarial Science*  GPA: 3.15/4.0 (9/2011-2/2013)

**Northeastern University** Boston, MA

*B.S. Organizational Leadership* - Summa cum Laude GPA: 3.76/4.0 (9/2009-5/2011)

**EXPERIENCE**

**Homesite Insurance** Boston, MA

***QA Rating Analyst*** (2/2014-present)

Develop a software to calculate homeowner, renters, and condominium insurance premium. Manage second home insurance project testing and ensure the quality of the product release. Validate and analyze insurance policy premium of 48 states in the U.S. over 1 billion dollars a year, which is critical to the company’s underwriting results and product quality.

* Use SAS and SQL to develop software to extract customers’ data from sells platform and apply insurance premium calculation function rules to calculate insurance premium of homeowner, renters, and condominium insurance products for 48 states in the U.S. Compare calculation results with production premium to ensure premium accuracy.
* Analyze and implement over 100 calculation rules and thousands of insurance rates factors in insurance premium calculation software. The rules and factors include house market values, construction type, location, earthquake, weather, claim, personal property, personal liability, medical payments, dangerous dog, and water backup.
* Apply Python to build a software to automatically validate insurance affinity data to guarantee production release accuracy. This program automatically testes data from all 48 states, all three insurance products types, handle errors, generate excel report, and produce a word document.
* Implement Python to setup a program to validate affinity data consistency cross different platforms and servers. It guarantees the consistency of data cross different platforms and automatically generates reports for solution teams.
* Attend project meetings and effectively communicate other peers to ensure work efficiency and accuracy. Track project progress to ensure the project meet the business requirements.

**BNY ConvergEx Group** Boston, MA

***Algorithmic Trading Analyst/Developer Intern*** (6/2013-2/2014)

Develop a trading engine written in SQL to analyze trading data. Guarantee millions shares trade correctly.

* Build SQL trading engine to analyze the trading strategy inculding: time, type, size, and price.
* Test the performance of the trading algorithms inducing TWAP, VWAP, POV, Dark-pool, MOO, and MOC.

**PROJECTS&COURSE WORK**

**Direct Mail Campaign for a High-End Clothing Chain Store (Python)** (CS109 Class, Harvard University )

Use machine learning models to increase return rate by 132%, and make a profit of $300,000 with a budget of $129,000.

Project Link: <https://sites.google.com/site/datasciencedmm109/home>

* Research 23000 customers information. Use K means to analyze customers clusters.
* Apply machine learning models: Logistic Regression (L1,L2), Random Forest, KNN, SVM(Linear), SVM(Rbf).
* Compare model performance by checking ROC curve and Profit curve. Feature Selection and Data Balancing.

**Recommender System for user rating of restaurants (Python)** (CS109 Class, Harvard University )

Set up Recommender System models (explicit) to achieve rating prediction RMSE with 0.88 with 1-5 rating scale.

* Import customers’ 1.17 million users’ data. Analyzed rating by user and restaurants. Calculated common support.
* Use user and item bias to build baseline model and Ridge Regression model. Use RMSE to test model performance.
* Apply Latent factors models. Use Alternating least square and Ridge regression to find latent factors
* Take stacked regression to do ensemble model of KNN, baseline ridge, and latent factors models.

**QUALIFICATION EXAMS**

* Society of Actuaries Exam Probability Society of Actuaries Exam Financial Mathematics
* Society of Actuaries VEE credit Corporate Finance

### SKILLS

* Programming skills: Python, SAS, SQL, and R. Languages: English (Fluent), Mandarin Chinese(Native)

### AWARDS & ACTIVITIES

* Dean’s list for five semesters (2009-2011) & Double Husky Scholarship (4/2011)
* Member of Harvard Extension School Alumni Association (Since 7/2017)