

Eric (Binqian) Zeng

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Education

- New York University, Courant Institute of Mathematical Sciences** **New York, NY**
Mathematics in Finance; part-time graduate program on-going
Courseworks: Derivative Securities, Operating System(C/C++)
Jan 2019 – Present
- New York University, Courant Institute of Mathematical Sciences** **New York, NY**
M.S Data Science; GPA: 3.3/4.0;
Courseworks: Machine Learning, Natural Language Processing(Kyunghyun Cho), Deep Learning(Yann LeCun), Statistical and Mathematical Methods, Big Data(Hadoop MapReduce, Spark), Data Science in Quantitative Finance
Sep 2016 – May 2018
- Sun Yat-sen University, School of Engineering** **Guangzhou, China**
B.E Theoretical and Applied Mechanics (Fluid Dynamics Focus); GPA: 3.7/4.0
Honor: Third-class scholarship (three times)
Relevant Course: Numerical Methods, Finite element analysis, Ordinary Differential Equations, Fluid Dynamics
Sep 2012 – Jun 2016

Work Experience

- Swiss Reinsurance Company Ltd. (Swiss Re)** **Armonk, NY**
Analytics Specialist/Data Scientist
Jan 2019–Present
 - * **Catastrophe Loss Impact Estimation**
 - Developed models to estimate liabilities of incoming claims after a catastrophe to benefit financial position and operation
 - Conducted liabilities estimation in both aggregated and individual level with insurance coverages information, satellite images data, and buildings footprints geographic data
 - Generated geographic features by zonal statistic analysis; Involved image features by convolutional neural network(CNN)
 - Captured time distributed features by CNN; Constructed the estimation regression model by random forest
 - * **Other Projects**
 - Identify rental real estates insurance market opportunities for a client with US census, Zillow, and uniform crime report data
 - Quantified fire accident risk for underwriting properties of a client with geolocation data and national fire incident reporting data
- King Street Capital Management, L.P.** **New York, NY**
Data Science Intern (full-time)
Jul 2018–Dec 2018
 - * **Companies KPI Forecasting Model**
 - Constructed an ensemble model to forecast KPIs of companies
 - All base learners and the top learner are SVMs with different constraints
 - Meta-features contains regression results from base learners and evaluations from different metrics
 - Handled collinearity in meta-features by matrix factorization; Reduced overfitting by ridge regularization and noise injection
 - * **Analyzing Alpha in Corporate Filings**
 - Categorized companies with high and low information ratio by NLP techniques and neural networks
 - Optimized GloVe word-embedding by corporate fillings and financial news for sentence representation features
 - Captured textual changes in 10-K and 10-Q fillings by statistical analysis as additional features
 - Used recurrent neural network based models, and attention techniques to improve classification performance
- Crypto Investments** **New York, NY**
Machine Learning Engineer Intern
Sep 2017–Dec 2017
 - * **Event-Driven Forecasting Model for Price of Cryptocurrencies**
 - Web-scraped cryptocurrencies news and trade data by API and Beautiful Soup in Python; Data management with MongoDB
 - News sentiment analysis by Word2Vec; Event embedding by Open IE; Captured effects of different time spans by CNN

Portfolio

- Enhanced Seq2Seq Model for News Text Summarization (Capstone Project in NYU)**
 - * **Keywords:** Pytorch, Seq2seq Neural Network, Bi-LSTM, Pointer Network, Semantic Relevance
 - The Seq2seq text summarization model is a hybrid of extractive and abstractive approaches trained on CNN/Daily Mail news
 - Bi-LSTM encoder with attention mechanism; Pointer network improves the accuracy of words generation and the ability of handling out-of-vocabulary words
 - Involved cosine similarity term between encoded source representation and generated summarization representation into the negative log-likelihood loss function to encourage semantic relevance
- Commodity Trading Position Forecasting Model**
 - * **Keywords:** Covariance Matrix, Matrix Factorization, Regularization
 - Created regression models that forecast the optimal trading positions for oil, sugar, copper, gold, and natural gas futures
 - Estimated covariance models over rolling windows for asset classes; Explained the variance asset class by top alpha factors
 - Applied SVD on alpha factors to filter down signals and forecast returns; Reduced overfitting by elastic net regularization

Technical Skills & Certificates

- Programming & Scripting Language:** Python, C/C++, R, Matlab, Scala
- Toolkits, Softwares & Operating Systems:** Tensorflow, Pytorch, Keras, NLTK, Scikit-learn, AWS, Hadoop, Spark, MySQL, MongoDB, Github, Linux/Unix, Windows