

# BOWEN ZHANG

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## EDUCATION

### Columbia University

*M.S in Business Analytics*

New York, NY  
Expected Dec 2023

- **GPA:** 3.92/4.0
- **Relevant Coursework:** Artificial Intelligence, Data Analytics, Business Analytics, Optimization

### University of British Columbia

*B.Comm in Business and Computer Science Honors*

Vancouver, BC  
May 2022

- **GPA:** 3.85/4.0, Dean's List
- **Relevant Coursework:** Machine Learning, Statistics, Advanced Database, Algorithm Design

## WORK & RESEARCH EXPERIENCE

### PIMCO

New York, NY

*Quantitative Research Analyst Intern*

Jun 2023 – Present

- Implemented **LLM** workflow using **BERTopic** and **OpenAI** to extract topics from financial news and predicted M&A activities with 91% accuracy; facilitated the quant portfolio management team to make investment decisions
- Implemented **incremental learning** leveraging **IncrementalPCA**, **MinibatchKMeans**, and **onlineCountVectorizer** to process 23 years of data; conducted **time series analysis** to showcase the topic trends over time

### Noumena

New York, NY

*Data Science Intern*

Jan 2023 – May 2023

- Productionized the **regression** model to find intrinsic values for self-employed workers based on their personal, credit, and business information provided; leveraged the model to estimate clients' potential and achieved **RMSE** of 3.23
- Retrieved the clients' data from **Snowflake** by writing **SQL** queries; Reported the most important questions generated by the model by drawing out **SHAP force plot** and **summary plot**

### China International Capital Corporation (CICC)

Beijing, CN

*Data Science Intern*

Jul 2021 – Oct 2021

- Developed ML models to assess the likelihood of loan default based on financial metrics from the WIND database and customer demographic data; achieved **roc\_auc** score of 78% and contributed to \$0.2M potential annual savings
- Implemented and compared algorithms namely **Random Forest**, **XGBoost**, and **LGBM** to make predictions; built pipeline for data preprocessing, conducted hyperparameter tuning using **RandomizedCV** with 5-fold **cross-validation**

## TECHNICAL PROJECTS

### Deep Learning: Loan default prediction

Apr 2023 – May 2023

- Built a credit scoring model by predicting loan default rates with 3-layered **feedforward neural networks** for LendingClub in **Keras**; optimized the model with **stochastic gradient descent** and achieved accuracy of 90%
- Implemented **EarlyStopping** and **dropout** to avoid overfitting; added **batch normalization** for data scaling; tested the model across 500 **epochs** with different batch sizes to improve accuracy

### Natural Language Processing: Yelp Review

Apr 2023 – May 2023

- Predicted Yelp business reviews based on user comments by comparing models such as **DistilBERT** and **MultinomialNB** to improve the baseline accuracy by 11%; conducted **LDA** and **sentiment analysis**
- Applied various preprocessing methods to machine learning models namely **tf-idf**, **tokenization** and **stemming**

### Big Data: Movie Recommendation

May 2020 – Jun 2020

- Built a **collaborative-filtering** movie recommender system with **PySpark ALS**, leveraging the computing power of **AWS EC2**; predicted movie ratings with RMSE of 1.36

## SKILLS

- **Quantitative Skills:** Python (Numpy, Pandas, Seaborn, Scikit-Learn, MILib, NLTK), R, SQL, LLM, Transformer
- **Database:** SQL\*Plus, MySQL, Snowflake, Microsoft Access
- **Statistical Modeling:** UMAP, HDBSCAN, ANOVA, Factor Analysis, Ensemble Methods