

Linshen (Lionel) Cai

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EDUCATION

Boston University <i>BA in Economics & Mathematics</i>	Boston, MA Sep. 2020 – May. 2023
<ul style="list-style-type: none">■ Awards: College of Arts & Sciences Dean's List (2022 Spring, 2022 Fall)■ Coursework: Uni/Multi-Variate & Vector Calculus; Linear Algebra; Probability & Statistics; Differential Equations; Probability Theory (Grad Level); Optimization Methods (Grad Level); Micro & Macroeconomic Theory (Grad Level); Introduction to Computer Science; Data Science in R■ Coursera Certificates/MOOCs: Python, Algorithms, Discrete Math, Databases & SQL, Machine Learning	
Rutgers University <i>School of Arts and Sciences (transferred before major declaration)</i>	New Brunswick, NJ Sep. 2018 – Jul. 2020

PROFESSIONAL EXPERIENCES

MobiDrop, Inc. <i>Data Analyst Summer Intern</i>	Boston, MA May. 2022 – Jul. 2022
<ul style="list-style-type: none">■ Deeply engaged in the full development pipeline of the bioinformatics analytical software MobiVision, which could perform automated Barcode & UMI Identification, Data Preprocessing, Count Matrix Generation and Data Visualization & Interpretation based on raw FASTQ files■ Independently developed several automatic data processing and analytic programs/toolboxes using R, Tableau and Python (NumPy/Pandas/SciPy/PyMongo) to deal with the massive unstructured biotech data stored in the data lake■ Refined the performances of existing Machine & Deep Learning Models by 7.43% through data augmentation, hyperparameter optimization and stacked generalization & blending	
Shanghai Tianhua Group <i>Data Analyst Intern</i>	Shanghai, CHN Nov. 2020 – Mar. 2021
<ul style="list-style-type: none">■ Constructed & maintained the internal database, taken full charge of the whole process of data collection/cleansing/mining using web scrapers/spiders & textual analysis tools (BeautifulSoup, Requests, Scrapy) for the construction market■ Completed the differential characteristic analysis, feature extraction and prediction by dint of machine learning algorithms (PCA, Xgboost & LightGBM) to identify the potential target client groups and market scales for different sub-sectors■ Adopted statistical hypothesis methods (A/B testing etc.) and time series analysis to continuously monitor and ameliorate the effectiveness of corporate market development and sales promotion	
Ruitong Investment Management Co., Ltd. <i>Investment Research Analyst Intern</i>	Shandong, CHN Apr. 2020 – Jun. 2020
<ul style="list-style-type: none">■ Provided feasible recommendations for clients regarding portfolio allocation, risk monitoring and performance optimization using Markowitz and Black-Litterman Model■ Examined macro and statistical characteristics of fixed-income, equity, and money market funds over \$9 million to generate the research report on specific industries and provide benchmark analysis to the client	

RESEARCH PROJECTS

Bond Price Prediction with Machine & Deep Learning
<ul style="list-style-type: none">■ Comprehensively assessed the feasibility and suitability of a series of Machine Learning (PCA + XgBoost/LightGBM) & Deep Learning (AutoEncoder + GRU/LSTM) models on the predictions of corporate bond prices based on the Benchmark Bond Trade Price Challenge on Kaggle■ Widely adopted Hyperopt & AutoML to perform the automated hyperparameter tuning process with Tree of Parzen Estimators (TPE) Algorithm, outperformed the SOTA solution by 33.18% in terms of test MAE score

CO-CURRICULAR ACTIVITIES

Minister of Commerce – BUCSSA (Boston University Chinese Students and Scholars Association)	May. 2021 – Jan. 2023
<ul style="list-style-type: none">■ Responsible for outreach. During the tenure, has raised more than \$5,000 in sponsorship for the Student Union, and provided financial support for various activities of the Student Union like a week of CP, BU Freshman Meeting).■ Responsible for activities hold Responsible for the planning and holding of a number of on-campus activities, including but not limited to the Chinese New Year Carnival, the Autumn Tour of Witch Town and the 2025 BU Chinese Freshman Meeting	
Core member – The Dao Lab (Chinese Philosophical Taoism Society)	June. 2022 – May. 2023
<ul style="list-style-type: none">■ Organized dozens of workshops with topics “the philosophy of mind”, and weekly reading clubs to analyze books and articles on Taoist philosophy. Including “Tao Te Ching”, “Philosophy of the Mind”, etc. promoting traditional Chinese Taoist philosophy■ Organized and participated in 3 volunteer activities including delivering food to poor communities and painting chairs.	

ADDITIONAL INFORMATION

- **Skills:** Proficient in Python, C/C++, VBA, MATLAB, R and Tableau
- **Interests:** Golf, Basketball, Strategy Games