Luofei LIANG

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EDUCATIONAL BACKGROUND

The Chinese University of Hong Kong(CUHK)   **Hong Kong, China**
MSc in Mathematics   Sep. 2020 - Jun. 2025 (expected)
- **Core Modules:** *Computational Mathematics, Mathematical Principles for AI, Mathematical Image Processing, Econometric Principle and Data Analysis, Social and Economic Networks, Mathematics for Logistics, Complex Analysis and Its Applications, Probability and Stochastic Analysis.*

Tianjin University of Commerce   **Tianjin, China**
BSc in Data Science and Big Data Technology   Sep. 2020 - Jun. 2024 (expected)
- **GPA:** 90.86/100 (top 1/66)
- **Core Modules:** *Mathematical Modelling, Probability Theory, Advanced Algebra, Mathematical Statistics, Mathematical Analysis, Numerical Calculation Method, Regression Analysis, Principle and Application of Database,* etc.

INTERNSHIP EXPERIENCE

Shanghai Caili Internet Co., Ltd.   **Shanghai, China**
Machine Learning/Knowledge Graph Algorithm Engineer Intern   Jul. 2023 - Aug. 2023
Project Introduction:
- **Resume job matching application** (JD anchor rating): Evaluated CV data based on JD data (provided CV's highlights, shortcomings, and comments for certain positions' JD).
Was responsible for:
- Utilized LLM for **data distillation**; provided JD and CV data to ChatGPT and enabled ChatGPT to generate accurate highlights, shortcomings, and comments for CV through iteration and optimization of prompts.
- Trained the **JD label extraction model** via the **Bert-LSTM** model (named entity recognition); for a JD posted by HR, extracted it into certain fields, such as education, major, professional skills, certificate, etc.; established the Bert-LSTM model, and continuously optimized and adjusted the learning rate as well as epoch to increase accuracy.
- **JD & CV anchor sorting**; organized the content written by the consultant into practical and easy to program indicators.
- Applied **knowledge graphs** to analyze the strengths and weaknesses of tool skills in JD & CV; utilized **text similarity** for analyzing and matching with knowledge graph content.

Shanghai Meetsocial Co.,Ltd.   **Shanghai, China**
Data Analytics Intern   Mar.2024 - May 2024
Project Introduction:
- Training a large language model using RAG to answer specific marketing knowledge.
Was responsible for:
- Optimize the workflow using RAG.
- Fine-tune the large language model for bad case.

PROJECT EXPERIENCE

The Production of Data Analysis Interactive Experiment Platform
Project Manager   May. 2022 - Present
- Project Overview: Developed an experimental platform that could obtain detailed visualization and results of algorithm processes through button operations and parameter settings, with the aim of improving the convenience of data analysis and data mining for students and the demonstration of classroom teaching for teachers.
- Demand analysis: Designed a questionnaire in four dimensions based on the actual situation of students, and distributed over 200 questionnaires; extracted four factors from the results using factor analysis via **SPSS** and achieved a cumulative explanation of 66.7% of the information; then applied the **structural functions** to determine the bias of students towards data analysis code requirements, and finally formed a platform development scheme.
- Project Achievements:
  - Developed a data analysis interactive experimental platform using **pyqt5**.
  - The platform implemented data importing and displaying from **SQL**, with built-in data preprocessing methods such as missing and outlier handling, feature encoding, etc.
  - Built-in machine learning models such as **support vector machines, random forests, and XGboost**, with running results and visual charts stored in **SQL**.

PAPER PUBLICATION

A Dynamic Cost-Adjusted Adacost Model for Credit Prediction of Smallholder Farmers (second author)
Under review by Journal of Forecasting(JCR Q1)   2022 - 2023
- Developed prediction algorithms for datasets with severely imbalanced positive and negative sample sizes.

- Researched over 40 papers, and integrated widely used feature sets for credit default problems.
- Feature dimensionality reduction; used the number of principal components as the hyperparameter for final model optimization, which broke the conventional method of using cumulative variance contribution rate for feature dimension selection, and achieved better prediction results with fewer dimensions.
- Optimized the cost sensitivity factor of Adacost, improved the theoretical derivation of Adacost, and provided analytical solutions for the optimal parameters.

ISFormer:Improved Seasonal Transformer for Power Load Forecasting(first author)

Under review by Applied Soft Computing(JCR Q1) 2024
- Combine the efficient distillation attention mechanism and time-series decomposition module as the kernel of our Transformer model.
- Adopted Time2Vec module as the model's temporal information embedding module, which enhances the model's predictive performance and seasonal capture capability.

Learning Effectiveness Analysis for Data Mining Course Based on Structural Equation Modeling (first author)

Accepted by Guide Magazine, ISSN 1008-3324 2022 - 2023
- Collected data on students' learning situation in the data mining course, and applied factor analysis to prove the good validity of the questionnaire structure.
- Utilized structural equation modeling to obtain the impact of students' pre-class foundation, in-class status, and post-class expansion on learning outcomes, ultimately provided suggestions for students' learning and teachers' teaching.

CONTEST EXPERIENCE

- 2023 Mathematical Contest in Modelling (MCM): Understanding Used Sailboat Prices — Honorable Mention
- The 11th Asia Pacific University Mathematical Contest in Modeling: Subpixel Edge Extraction — Third Prize
- The 10th "Teddy Cup" National Data Mining Challenge: Power System Load Forecasting — Third Prize
- 2021 MathorCup Mathematical Modeling Challenge: Accelerate Vehicles' Sales Speed — Third Prize
- The 3rd Tianjin "Ruisi Cup" Data Modeling Competition: Inflation Trend Prediction — Winner Award

ACHIEVEMENTS & AWARDS

- **Honorable Mention** in Mathematical Contest in Modelling — Jul. 2023
- The **First Prize Scholarship** for the Academic Year 2021-2022 — Nov. 2022
- **Merit Student** for the Academic Year 2021-2022 — Nov. 2022
- **Third Prize** of the 10th "Teddy Cup" National Data Mining Challenge — Jun. 2022
- **Winner Award** of the 3rd Tianjin "Ruisi Cup" Data Modeling Competition — Mar. 2022
- **Third Prize** in the MathorCup Mathematical Modeling Challenge for University Students — Mar. 2022
- **Third Prize** in the 11th Asia Pacific University Mathematical Contest in Modeling — Jan. 2022
- **Third Prize** for China University Big Data Challenge — Dec. 2021
- The **First Prize Scholarship** for the Academic Year 2020-2021 — Oct. 2021
- **Outstanding Student Cadre** for the Academic Year 2020-2021 — Oct. 2021

SKILLS & OTHERS

Skills: Highly Skilled in Python, SQL, Tableau, SPSS, MS Office