Hongzhen Du

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EDUCATION

Xi'an Jiaotong-Liverpool University
Bachelor of Economics | Finance Track   Jul 2023 (Expected)
- **Overall GPA**: 3.74/4.00 (**First Class Honours Degree**); **Rank:** 8/121
- **Courses**: Intermediate Econometrics, Mathematical Economics, Numerical Analysis, Real Analysis, Game Theory, Intermediate Microeconomics, Intermediate Macroeconomics, Environmental Economics, Financial Management, Chinese Economy.
- **Honors:** University Academic Achievement Award (2021-2022), Continuing Academic Merit Scholarship (2019-2021)

University of Chicago | *Summer School Student*   Jun 2022 - Aug 2022
- Coursework: Quantitative Portfolio Management & Algorithmic Trading

Imperial College London | *Winter School Student*   Jan 2022 - Feb 2022
- Coursework: Computer Vision and Natural Language Processing

PROFESSIONAL EXPERIENCE

GF Securities   Jun 2022 - Aug 2022
Quantitative Analyst Intern | Over-The-Counter Department
- Visualized characteristics of CSI 300 stocks by industry with past 3 years' data through Python, calculated and standardized the alpha values selected the Top 3 of each industry to build a multi-factor stock selection model (return on equity, profit growth rate, turnover, monthly gains), with an excess return of 12%.
- Found the highest correlated stocks of the Top 5 industries in CSI 500 index through past 10 years data through Augmented Dickey-Fuller (ADF) Test and correlation analysis in Python, and wrote a pairs trading strategy with the result of 11% maximum drawdown and a Sharpe ratio of 1.89.
- Classified over 300 anti-money laundering rating messages of new derivatives customers by subjects with Python and generated initial review and rating opinions, saving over 75% of time.

Orient Securities   Jul 2021- Aug 2021
Summer Analyst Intern | Asset Management Department
- Analyzed the return, P/E ratio and capital scale to write 4 in-depth weekly recommendation reports on several companies illustrating the recommendation logic and evaluation assumptions, which contributes to increase the department fund by 10%.
- Analyzed the performance of the new energy vehicle market through macro and financial data and writing an industry research report and concluded an optimistic scenario of the new energy terminal consumption scenario with the achievement of 20% targeted market share.

RESEARCH EXPERIENCE

Textual Analysis and NLP in Predicting Stock Prices   Jun 2022 - Jul 2022
 *Advisor: **Prof. Anand Bhojan** at National University of Singapore*
- Downloaded last 12 years' news related to US equities from investing.com and transformed the texts into words through word segmentation program.
- Segmented words from texts in US equity news and constructed investor sentiment index by mapping to emotion word dictionary
- Constructed investor sentiment index by giving marks to every word representing the investors' attitude to the stocks.
- Performed sentiment analysis through a dictionary containing 10 kinds of emotions on 10,000 pieces of news regarding 5 selected stocks, calculated the corresponding sentiment score and compared it with stock price movements with 74% prediction accuracy.

Time Series Analysis of Money Supply's Impacts in Turkey   Mar 2022 - Apr 2022
- Constructed 6 distributional lag models with different factors to test correlations and changes of dynamic cumulative multipliers between money supply, unemployment rate and real interest rate with data downloaded from Turkish Central Bank, and rejected the feasibility of applying monetary neutrality assumption on Turkish economic crisis over the last decade.

Policy analysis of Hong Kong and Thailand during 1997 Financial Crisis   Feb 2022 - Apr 2022
Advisor: Prof. Dave Schabes at University of Chicago | UChicago & PKU MPIF Capstone Project Excellence Award
- Examined the exchange rate systems under different choices in the monetary trilemma and presented connections dynamically between monetary policies and the movements of GDP and short-term interested rates.
- Analyzed the different reasons why the domestic currency overvaluation happened and how the current account deficit impacted the overall economy of Hong Kong and Thailand during the 1997 East Asian Financial Crisis, and demonstrated the rationale of corresponding fiscal and monetary policies on economic conditions.

Word Representation in Biomedical Domain Under Natural Language Processing
Best NLP Project | Imperial College London Data Science Winter School   Jan 2022 **-** Feb 2022
- Tokenized titles of academic papers downloaded from CORD-19 corpus into words by *split()* and ByPairEncoding in Python and found the 10 most relevant words co-occured with "COVID-19" through comparing Pointwise Mutual Information (PMI) in a co-occurence matrix.

- Performed Principal Component Analysis (PCA) and t-SNE to reduce the dimensions of word vectors and visualized 100 selected biomedical entities and filtered the Top 10 most semantically similar entities within the corpus by calculating cosine similarity.

Comparison between Domestic and Foreign Output Gap | *Research Assistant*
*Supervisor: **Prof. Syed Abbas** at Xi'an Jiaotong-Liverpool University*   Oct 2021- Dec 2021
- Utilized HP filters to generate output gap and potential output through monthly and quarterly total trade, GDP and IPI statistics after data cleaning and exported datasets containing trade weights and output gap through STATA.

LEADERSHIP EXPERIENCE

LinkedIn (China) Global Business Challenge | *Project Leader*   Oct 2021 - Nov 2021
- Coordinated a team of 5 to analyze the business situation of LinkedIn (China) after withdrawing social functions and forecasted future user growth patterns under possible new features.
- Organized the investigation regarding the feasibility of offering online professional courses with a widely recognized certificate for possible job seekers aimed at filling skill gaps.

Promotion on Suyin Jewelry by E-Commercial Live Broadcast | *Project Leader*   Dec 2020 - Mar 2021
First Prize at XJTLU Social Practice Competition
- Proposed the overall research portfolio and directed a roadshow that reproduced the research process and performed a mixture of drama, live broadcast and hip-hop.

SKILLS AND OTHERS

Technical: Python, STATA, EViews, R, Wind, Bloomberg, Microsoft Office, LaTeX
Language: Chinese (Native), English (Fluent), Cantonese (Fluent), Spanish (Elementary)
Interests: Travel, Urban Exploration, Fan Mail, Trainspotting, Drama
Open Courseware Certificates: Machine Learning (Stanford), Differential Equations (HKUST), SQL for Data Science (UC Davis), Numerical Analysis (HSE University), Data Structures (UCSD), Operational Research (NTU)