

EDUCATION

University of Michigan, Ann Arbor

Master of Science in Applied Statistics

Ann Arbor, MI
September 2018- May 2020

- Average GPA: 3.88 (out of 4.0)
- Curriculum: Natural Language Processing, Analysis of Time Series, Survival Time Analysis, Bayesian Modeling

Wuhan University

Bachelor of Science in Statistics

Wuhan, CN
September 2014 – June 2018

- Average GPA: 3.70 (out of 4.0) | Major GPA: 3.76 (out of 4.0) (Top 15%)
- Curriculum: Applied Regression Analysis, Multivariate Statistical Analysis, Stochastic Process, Nonparametric Statistics, Mathematical Statistics, Optimization Theory and Methods

PROJECTS

Asset Allocation using Regime-switching Hidden Markov Method

Innovation center, Yinhua Fund Management Co., Ltd

Beijing, CN
October 2020 – December 2020

- Investigated how to quantitatively characterize the assets performance rotation based on a regime-switching Hidden Markov Model other than the traditional Merrill Lynch Clock model.
- Incorporated 5 major asset classes: large-cap stocks, small-cap stocks, corporate bonds, government bonds, and gold. Conducted time-series clustering of market performance across different regimes based on the returns of these asset classes. Performed variable selection on the number of regimes using k-fold cross-validation and provided economic interpretations for the final model.
- Completed independently all tasks related to data preparation, data analysis, modeling, cross-validation, and result presentation.
- Constructed an asset allocation portfolio based on the model combined with risk parity weight allocation and the portfolio is currently undergoing live testing and has demonstrated stable performance amidst the backdrop of significant global economic fluctuations with a 4.2% excess return in the recent year compared with the benchmark.

Analysis of Beijing PM 2.5 Dataset Using MCMC-glmm

Team leader, final project for coursework

Ann Arbor, MI
April 2019 – May 2019

- Modeled the PM 2.5 data of Beijing with the weather conditions by using generalized linear mixed model (glmm).
- Applied Bayesian hierarchical model and Monte Carlo Markov Chain (MCMC) to estimate the parameters and used autocorrelation plot as well as trace plot to analyze the stability of the estimation.

Coupled Mixed Model for Joint Genetic Analysis of Complex Disorders from Independently Collected Data Sets: Application to Alzheimer's Disease and Substance Use Disorder

Summer Research, Carnegie Mellon University | Acknowledged by: Dr. Haohan Wang

Pittsburgh, PA
July 2017 – August 2017

- Proposed a Bayesian maximum likelihood model on multi-correlated responses data whose design matrix has missing values and to make predictions using the same-distribution sampled data as much as possible.
- Applied ADMM algorithm for optimization of the loss function and prove the convergency by block coordinate method. The method outperformed other competing methods including the baseline linear mixed model, supported by box plots of the area under ROC curves (auROC) of identifying the SNPs that are jointly responsible for both phenotypes and for Phenotype 1.
- Conducted derivation of the early formulas, as well as experiments and validations on small datasets. Received acknowledgement and appreciation from the authors with my name listed in the Acknowledgements section in the paper.

Entity extraction on documents from the period of the ROC(1912-1949)

Wuhan University Innovation Practice Project | Sponsored by Hanwang Technology Co., Ltd.

Wuhan, CN
June 2016 – April, 2017

- Preprocessed 1774 articles from almost a century ago, developed an annotation tool and manually labeled the names of people, locations and organizations.
- Built the baseline by applying generic Conditional Random Field (CRF) algorithm to extract the three types entities from documents in Republic of China and got the accuracy, precision, recall rate and F1 score.
- Solved the optimization problem applying the bagging framework to increase the recall rate of organization by 7% and reduced the time for the model to perform entity extraction tasks on the test set by 14%.

ACADEMIC AWARDS

- 2014 Freshman Scholarship (Awarded for exceptional performance in the entrance examination)
- 2015 Second-Class Scholarship (Awarded for academic excellence, based on ranking within top 10% of GPA among all students)
- 2016 Third-Class Scholarship (Awarded for academic excellence, Based on ranking within top 15% of GPA among all students)
- 2017 Third-Class Scholarship (Awarded for academic excellence, Based on ranking within top 15% of GPA among all students)

EXPERIENCE

Yinhua Fund Management Co., Ltd.

Senior Machine Learning Engineer, Innovation Center

Beijing, CN
May 2020- Present

Works include

- Developed and applied machine learning-based market strategies, including unsupervised clustering of time series of market daily performance, and risk reduction and stock portfolios diversification through graph analysis.
- Applied Large Language Models (LLMs) and other generative pre-trained models to investment research and wealth management. Tried different fine-tuning methods for LLM, including Low-Rank Adaptation(LoRA) and P-tuning. Other generative pre-trained models for different modalities include Stable Diffusion(image), Whisper(speech to text), Vits(text to speech), So-Vits-Svc(singing voice conversion) and so on.
- Developed a modern active equity investment research system and related functional modules, such as simulated portfolios and periodic research reports, within the company.

Yinhua Fund Management Co., Ltd.

Analyst Intern

Beijing, CN
May 2019 - August 2019

Works include:

- Developed workflow for constructing single-factor effectiveness tests, factor selection, fundamental multi-factor model construction, and Brinson factor attribution.
- Preprocessed historical data for internal portfolios and performed profit and risk attribution using Barra multi-factor model (CNE5).
- Created a task-oriented dialogue chatbot using the Python-based Rasa framework, applied in the field of investment and research for question answering and communication purposes. Leveraged the pre-trained Bert-Chinese-Large model for natural language understanding (NLU) and intent classification, and utilized the Dual Intent Entity Transformer (DIET) for entity extraction.

Qi An Xin Technology Group Inc

Development Engineer Intern

Wuhan, CN
November 2017- March 2018

- Participated in the development and testing of the Threat Intelligence Platform (TIP) project, which utilizes traditional network security methods combined with machine learning technology like supporting vector machine(SVM) to screen malicious emails, analyze the security of URLs, and identify website vulnerabilities.

CERTIFICATES AND HONORS

CFA (Chartered Financial Analyst) Level III Candidate

- Level II Passed Date: May 2023

Coursera Course Certifications

- Generative AI with Large Language Models | deeplearning.ai, aws | August 2023
- The Unix Workbench | Johns Hopkins University | September 2017
- Data Processing Using Python | Nanjing University | February 2017
- Machine Learning | Stanford University | November 2016

MCM Competition (Mathematical Contest in Modeling)

- Thesis: The effect of self-driving cars on the traffic flow in the bottleneck model
- Honorable Mention | April 2017

Others

Fluent in: Python, R, MySQL, Oracle, Redis

Skills: ggplot2, MapReduce, Sklearn, Pytorch, Tensorflow, Keras