Qingyin Ge

EDUCATION

Columbia University **New York, NY**
M.A. in Statistics *Dec 2020*
- **Honors:** Chair's List of Academic Achievement
- **Coursework:** Advanced Data Analysis, ML, Statistical Method in Finance, Stochastic Process, Time-series Model

New York University Shanghai + Courant Institute (New York) **Shanghai, China**
B.S. in Mathematics, Minor in Data Science, Finance *May 2019*
- **Honors:** *Cum Laude,* Recognition Award, Dean's List
- **Coursework:** Analysis, Algebra, Math of Finance, Statistical Data Science, Machine Learning, Econometrics

RESEARCH EXPERIENCE

Predict COVID-19 Fatal Population Using SuEIRD Model & Time Series **New York, NY**
Supervisor: Prof. Victor de la Pena *May 2020 – Aug 2020*
- Researched on existing compartmental models such as SIR, SEIR, used R software to evaluate the COVID-19 evolution trend and specifically predicted infected population for both short term (a week) and long term (5 years)
- Collected data from JHU Coronavirus Resource Center, and studied SEIRD model in order to help measure death trend; Built algorithm to estimate the corresponding model parameters to predict fatal population within one week
- Developed SuEIRD & Time Series model by adding unreported compartment and combining it with time series analysis; Built algorithm for basic SuEIRD model and conducted residual analysis with time series to predict Fatal population within one week with lowest RMSE
- Ensembled 10 models' prediction from ReichLab on Github using LASSO regression (Elasticnet) to reduce prediction error

Modern Portfolio Theory on Risk Management and Stock Return Prediction **New York, NY**
Supervisor: Prof. Zhiliang Ying *Mar 2020 – May 2020*
- Collected 9-year-data since 2010 of 8 stocks from Yahoo Finance and factor-data such as GDP, CPI, Unemployment Rate from government website; Visualized stock performance by time series plot, qq-plot, histogram, correlation plot using highchart
- Used CRP, CUP, and relative algorithm under Universal Portfolio Theory to construct portfolios, where the best portfolio using CRP and CUP will create 6 times the profit or so
- Used Markowitz Efficient Frontier, Constant Correlation Model, Single-index Model and Multi-index Model to construct corresponding best portfolios, and conducted risk management using Value at Risk and Expected Shortfall (bootstrap, parametric, historical) to evaluate portfolio performance
- Fitted multi factor model such as Fama-French Model to our 4 portfolios and did residual analysis using ARMA-GARCH model for portfolio return and volatility prediction

Survey on Large Scale Hypothesis Testing and False Discovery Rate **Shanghai, China**
Supervisor: Prof. Gerard Ben Arous *Mar 2019 – May 2019*
- Researched on papers written by Benjamini, Yoav, Holm, etc. about large scale hypothesis testing; Based on the book "Computer Age Statistical Inference" written by Professor Bradley Efron and Trevor Hastie to do the survey and make remarks about core ideas
- Focused on Bonferroni Bound, with its further improvement Holm's Procedure on FWER(conservative), and (Local) False Discovery Rate(improvement) from Bayesian point of view
- Compared those measurement to figure out when facing different situations which methods could we choose

PUBLICATION & AWARDS

Yingcheng Sun, Alex Butler, Fengyang Lin, Hao Liu, Latoya Stewart, Jae Hyun Kim, Qingyin Ge, Xinyi Wei, Cong Liu, Chi Yuan, *The COVID-19 Trial Finder*, JAMIA Brief Communications.

Qingyin Ge, Yiren Wang, Yunan Xu, *COVID-19 Infected, Recovered, and Death Prediction using SuEIRD Model*, arXiv.org. To appear.

Qingyin Ge, Yunuo Ma, Yuezhi Liao, Rongyu Li, and Tianle Zhu, *Risk Management and Return Prediction*, arXiv.org, arXiv:2007.01194.

Xiaohan Yang, Qingyin Ge, *A Concert Planning Tool for Independent Musicians by Machine Learning Models*, arXiv.org, arXiv:1908.11200.

2018 The Mathematical Contest in Modeling: Honorable Mention

EXTRACURRICULAR ACTIVITIES

Columbia University: Teaching Assistant of Time Series and Linear Regression Model *Feb 2020 – Current*
JP Morgan: Research Assistant on LIBOR & OIS rate, with substitute SOFR *Sep 2018 – Nov 2018*

SKILLS & INTERESTS

Technical Skills: MS Office Suite(Fluent), R(Fluent), Latex(Fluent), Python(Basic), Java(Basic), SQL(Basic)
Languages: Mandarin (Native), English (Fluent), Korean (Conversational) **Interests:** Piano, Beijing Opera, Chinese Dancing