

## MINGYUAN (MINDY) CHEN

mingyuan.chen@nyu.edu ■ <http://www.linkedin.com/in/mingyuanc>

### EDUCATION

---

#### NEW YORK UNIVERSITY

New York, NY

#### The Courant Institute of Mathematical Sciences

#### MS in Mathematics in Finance (– Dec. 2020)

- **Future Coursework:** Lloyds' algorithm, SDEs, parallel programming for Monte Carlo simulation, Brownian motion and martingales, Black-Scholes formula and applications, Kolmogorov backward equation

#### IMPERIAL COLLEGE LONDON

London, UK

#### BS in Mathematics (– Jun. 2019) with First Class Honors, GPA4.0/4.0

- **Coursework:** Measure based probability theory, applied probability, functional analysis, option pricing, real analysis, linear algebra, algebra, time series, topology, numerical analysis, Computational PDE

### EXPERIENCE

---

#### BEIJING QINGKA TECHNOLOGY

Beijing, China

#### *Analyst and Strategy Advisor to CEO* (Jul. 2017 – Jul. 2018)

- Created Keto e-commerce platform and collaborated with JINGDONG to lower supply cost by 5%
- Navigated customers through website, implemented k-means clustering to analyze Behavior Flow, identified potential profitable products, improved repurchasing rate by 458.9% and became CEO's partner

#### IMPERIAL COLLEGE LONDON

London, UK

#### *Admissions Data Analyst* (Jul. 2017 – Jan. 2018)

- Customized three prediction models based on multinomial logistic regression and k-fold cross-validation, investigate correlation among over 100 variables in UCAS data set of 100024 applicants over 10-year period, forecasted amount of qualified applicants to examine risk of insufficient amount of applicants due to Brexit
- Wrote 28-page report used at Imperial College London admissions' conference to improve admissions policy and created 13 CSV files that contain results of predicted acceptance probability and applicants' response

### PROJECTS

---

#### MARY LISTER MCCAMMON FELLOWSHIP

London, UK

#### *Theoretical & Applied Projects based beyond Rough Path and Signature* (Jul. 2019 – present)

- Implemented Levy's construction to simulate reparametrized Brownian path, discussed and formulated multiplicative transmission model with Professor Terry Lyons who developed Rough Path Theory
- Integrated code word functions with white noise, found case when Dynamic Time Warping (DTW) failed to recover code word and discovered breakthrough application of p-variation distance in communication theory
- Presented this research at Alan Turing Institute and learnt application of signature in trading strategy

#### IMPERIAL COLLEGE LONDON

London, UK

#### *Finite Difference in Hyperdiffusion, Biharmonic Equation and Dynamics of Plates* (Feb. 2019 – April. 2018)

- Modified Crank-Nicolson scheme (CN) to solve Hyperdiffusion equation with periodic boundary conditions, proved CN's property of unconditional stability via Fourier Analysis, designed convergence criterion based on convergence of Cauchy sequence and compared computation time taken for explicit and implicit methods
- Simplified nonlinear Biharmonic equation problem to two Poisson equations, modified Gauss-Seidel, Over-Relaxation method and Multigrid V-cycle to solve simultaneous equations and compared their efficiency
- Visualized effect by moving train on deformation of track and found 2 critical speeds that trigger resonance

#### THE UNIVERSITY OF BRITISH COLUMBIA

Vancouver, Canada

#### *Structural Causal Model Entropy Maximization, International Research* (Jul. 2018 – Sept. 2018)

- Received Dean's Fund (£3000, granted 4/230) and learnt causality and HSIC-based algorithms
- Used differential Shannon entropy, zero-one loss and Brier score to infer causal direction in bivariate case

### COMPUTER SKILLS/OTHER

---

**Programming Languages/Other Software:** Java, Matlab, R and Python

**Languages and Awards:** English (fluent), Mandarin (native), Parliamentary Debating Team China Captain in World School Debating Championship 2016, UK Leon Paul Fencing Competition 3<sup>rd</sup> Prize