JINGQI ZHU

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EDUCATION

University College London *September 2022 - Present*
MSc in Statistics

University of Manchester *September 2020 - June 2022*
BSc in Mathematics and Statistics
Grade Average: 79.5/100

Beijing Institute of Technology *September 2018 - July 2020*
BSc in Mathematics and Applied Mathematics
Grade Average: 80/100

ACADEMIC PROJECTS

Statistical Detection of SARS-CoV-2 Variants based on PCR *July 2022 – September 2022*

- Surveyed domain knowledge about SARS-CoV-2 from PHE/UKHSA repository, technical briefings and relevant journals.
- Preprocessed the PCR data, used linear regression to overcome person-to-person variability, set up a Gaussian mixture model for finding clusters in residuals, implemented classification using EM algorithm, compared GMM with K-means method, discussed the validity of the method.
- Reported to Dr. Yang Han (University of Manchester) weekly, accomplished a final report

Bayesian Analysis via MCMC *October 2021 – June 2022*

- Independently studied Bayesian analysis and MCMC-related topics for two semesters with reference to *Bayesian Data Analysis*, *MCMC in practice* and *Introducing Monte Carlo methods with R*, reported learning outcome to the supervisor Dr. Christiana Charalambous (University of Manchester) weekly
- Accomplished a 50-page report including Bayesian analysis(Bayesian workflow, prior selection and checking, history, challenges), classical simulation methods (inverse-cdf, transformation, rejection, importance sampler), Markov chain Monte Carlo (Metropolis-Hastings algorithm, Gibbs sampler, simulated examples, comparison) and a brief outlook to other techniques (RJMCMC, HMC, SMC, ABC)
- Took as a 20 credit two-semester project, finished a final report and presented a 10 minute viva

Overview of Saddle Point Escaping Problem *August 2021 - September 2021*

- Independently conducted a small project in three weeks, including referring to research papers in the past five years and reporting the progress to professor Patrick Rebeschini (University of Oxford) every week
- Completed a 9–page literature review named *Overview of Saddle Point Escaping Problem* and made an oral presentation

SUMMER SCHOOLS

Mathematics for Machine Learning
Online *July 2021 – August 2021*

- Attended lectures given by Prof. Patrick Rebeschini (University of Oxford) and problem classes given by Dr. Qun Wang (University of Toronto), which covers part of the Oxford MSc course 'Algorithmic Foundation of Learning'
- Achieved final score 95/100

North Carolina State University Summer Math Program
Raleigh, US *July 2019 – August 2019*

- Modules: Dimensional Analysis; Cryptography; Introduction to Machine Learning; Numerical Analysis; Black-Scholes Model

PRIZES AND SCHOLARSHIPS

Prizes

Mathematical Modeling Competition of BIT: Second Prize *June 2020*
Contemporary Undergraduate Mathematical Contest in Modelling: Second Prize *September 2019*
Mathematical Modeling Competition of BIT: Third Prize *June 2019*

Scholarships

Scholarship for Comprehensive Assessment of BIT *October 2020*
Scholarship for Comprehensive Assessment of BIT *October 2019*
Scholarship for Comprehensive Assessment of BIT *April 2019*

LANGUAGES AND SKILLS

Languages: English, Mandarin
Skills: R (main), MATLAB, C, Python (basic)

STATISTICAL COURSES TAKEN

BSc: Mathematical statistics, Statistical methods, Statistical inference, Multivariate statistics and machine learning, Time series analysis, Regression analysis, Generalised linear models
MSc (expected to take): Statistical models and data analysis, Statistical design of investigation, Medical statistics 1, Medical statistics 2, Applied Bayesian methods, Bayesian methods in health economics, Selected topics in statistics, Statistical computing