Xiandong Zou

BASIC INFORMATION

- Gender: Male
- Nationality: Chinese
- E-mail: *xiandong.zou20@imperial.ac.uk*
- Website: *https://yqcca.github.io/*
- GitHub: Yqcca

EDUCATION

Imperial College London *2020/10-Present*
MSci in Mathematics *London, UK*
On track for First Class

- Modules include:
  - Real Analysis and Complex Analysis (95.39%), Linear Algebra and Numerical Analysis (81.79%), Multivariable Calculus and Differential Equations (89.96%), Data Science Methods (85.40%), Network Science, Statistics, Time Series Analysis, Applied Probability, Statistical Theory, Principles of Programming

Shanghai Qibao Dwight High School *2017/09-2020/06*
International Baccalaureate Diploma Programme *Shanghai, China*
IB Scores: 41/45

- Related Courses: Mathematics HL, Physics HL, Economics HL

SUMMER SCHOOL

Brown University *2019/07-2019/08*
Introduction to Applied Geometry *Providence, US*

- Topics include: Statics, Dynamics, Projective Geometry

HONORS & AWARDS

- 2023 Imperial College UROP Award
- 2022 Dean's List (Year 2) at Imperial College London
- 2019 American Mathematics Competition 12: Certificate of Distinction
- 2019 Euclid Mathematic Contest: Certificate of Distinction
- 2019 34th Annual AAPT PhyscisBowl Contest: Honorable Award

RESEARCH EXPERIENCE

Imperial College London *2023/07-2023/09*

- **Undergraduate Research Opportunities Programme** *London, UK*
  - Topic: GNN Expressiveness and Graph Generative Models
  - Used PyTorch, PyTDC, and Torchdrug to reproduce and improve current graph representation modules in graph generative models.
  - Implemented new state-of-the-art molecular generation objectives to evaluate the new graph generative models.
  - Source code: *https://github.com/Yqcca/graph-generative-models*

- **Undergraduate Research Opportunities Programme** *2022/05-2022/09*
  - Topic: Explainable AI for Image Segmentation based on COVID-19 *London, UK*
  - Used PyTorch, Tensorflow, and MONAI to construct deep learning models to segment images related to healthcare and reproduce explainable modules in relevant papers.
  - Analysed the local and global explainability of different deep learning models, such as U-Net, applied in COVID-19 diagnosis.

- **Group Research Project** *2022/05-2022/06*
  - Topic: Bayesian Filtering *London, UK*
  - Learnt Bayesian Filtering methods and Markov Chain Monte Carlo methods.
  - Implemented the algorithms for several particle filters in Python.
  - Analysed the numerical results based on the performance of Kalman Filter and Particle Filters in hidden Markov chain with linear Gaussian and non-linear Gaussian noise simulations.
  - Project homepage: *https://github.com/Yqcca/Filters*

- **Individual Research Poster Project** *2021/05-2021/06*
  - Topic: Martingales *London, UK*
  - Presented several theorems of martingales, such as the optional stopping theorem.
  - Applied martingale convergence theorem in a Galton-Watson process, generation population problem, and discussed the corresponding convergence results under different situations.

INTERNSHIP

UTech Academy 2021 Summer *2021/07-2021/08*

- Teaching Assistant *Shanghai, China*
  - Taught Python and machine learning algorithms to high school students.
  - Supervised the a group of students to complete their final AI projects in speech and alphabet recognition.

SKILLS

- **Languages**: Chinese (Native), English (Fluent, TOEFL 110)
- **Programming**: Python, MATLAB, R, Julia, LATEX
- **ML Libraries**: Tensorflow, Keras, Scikit-learn, PyTorch, PyG, TorchDrug, MONAI
- **Hobbies**: Accordion, Go, Bridge