

Zonghui Liu

☎ +44-07752428409 ✉ zonghui.liu21@imperial.ac.uk 🏠 <https://github.com/acse-zl1021>

🎓 EDUCATION BACKGROUND

Imperial College London 10/2021 – 10/2022
MSc Applied Computational Science and Engineering MSc London, UK

- GPA: overall A
- Courses taken: Python Programming (A), C++ Programming (A*), Computational Mathematics (A), Inversion and Optimisation (A), Parallel Computing, Numerical Methods, Machine Learning, etc.

Wuhan University of Technology 09/2017 – 06/2021
Computer Science and Technology B.Eng. Wuhan, China

- GPA: 87.12/100
- Courses taken: Operating System, Data Structure, Algorithm, Numerical Simulations, Principles of Computer Organization, etc.

💼 INTERNSHIP

The Chinese Software International Co., Ltd. 07/2020 – 09/2020
Intern of Data Analysis Department Ningbo, China
Analysis of housing rental information in selected areas of Wuhan during COVID-19

- Pre-processed over 210,000 social housing rental information items during the COVID-19 epidemic, including data collection, cleaning and de-duplication.
- Designed the storage structure of over 170,000 social housing rental data and compressed the size of this data set to improve the work efficiency in data analysis.
- Analyzed the routes and trends of COVID-19 of Wuhan and developed a dynamic epidemic map.
- Mined potential relationship between the epidemic trend data and housing rental data.

🔑 RESEARCH EXPERIENCE

Analysis and Monitor of Abnormal Urban Traffic Flow Based on Wavelet Analysis 06/2019 – 10/2019
Advisor: Prof. Liu Xinwu National Space Science Centre, Chinese Academy of Sciences

- Pre-processing of the trajectory and speed data (overall 570,000) of taxis in Beijing in Sep of 2019.
- Modelled the Beijing transportation network and used Matlab to implement wavelet analysis algorithms.
- Predicted spatial and temporal information on urban traffic anomalies in Beijing during the National Day.
- Calculated the misjudgment rate and missed judgment rate based on the real traffic anomaly records.

Analysis and Optimization of Database System Storage Architecture 05/2019 – 06/2021
Advisor: Prof. Du Yajuan Wuhan University of Technology

- Implemented existing database replacement strategy.
- Analyzed the advantages and disadvantages of the existing replacement and indexing strategies using 100,000+ Tencent image data.
- Implemented an indexing strategy based on hotness using Gem5 simulator on a Linux server for an in-memory database.
- Designed and implemented a hotness-based shadow B+ tree indexing strategy using Intel PMDK tools and applied it to a Redis database.

Search for a Bloch point using Mean-field models in magnetic materials

01/06/2022 –

Advisor: Dr. Marijan Beg

Imperial College London

- Implemented energy calculation functions (Zeeman, Exchange and Dzyaloshinsky–Moriya) in atomistic and continuous model using Python and tested with Ubermag (An open source software for micromagnetism simulation).
- Implemented the Monte Carlo and Mean-field algorithms to minimise the total energy of the magnetic system.
- Plan to use the micromagnetic simulations to find out whether Skyrmions or Bloch points might be present at room temperature in FeGe, which is important in the search for novel storage materials.
- Plan to find out whether Bloch points might stably exist at room temperature in FeGe.

♥ COMPETITION and Award

Central China Invitational Competition of MCM (First Prize in Central China)

05/2019

⚙ SKILLS

- Programming Languages: C/C++ >= Python > Java > Matlab >> Verilog
- Language: English - TOEFL 101 (R29/L28/S22/W22)