Xing Liu

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EDUCATION

- **Imperial College London**   London, UK
  Doctor of Philosophy; Statistics (CDT in StatML at Imperial and Oxford)   *Oct 2020 – Sep 2024*
    - Funded by the Imperial College President's PhD Scholarship.

- **University of Cambridge**   Cambridge, UK
  Master of Advanced Study (Part III); Mathematical Statistics; Grade: 96.1% *(Pass)*   *Oct 2019 – Jul 2020*
    - Part III essay: *Approximate Bayesian Computation with Optimal Transport*

- **Imperial College London**   London, UK
  Bachelor of Science; Mathematics with Statistics; 1st Class Honours (Top 5% in cohort).   *Oct 2016 – Jul 2019*
    - Hyman Levy Memorial Prize, 2019 (awarded to one final year student of Mathematics for excellence in Statistics).
    - G-Research Ltd Prize, 2018 (awarded to students of Mathematics for academic excellence).
    - Faculty of Natural Sciences Dean's List, 2017, 2018 and 2019.

PUBLICATION AND PREPRINTS

- H Zhu, **X Liu**, R Kang, Z Shen, S Flaxman, F-X Briol (2020). *Bayesian Probabilistic Numerical Integration with Tree-Based Models.* Neural Information Processing Systems.

- **X Liu**, H Zhu, J-F Ton, G Wynne, Andrew Duncan (2021). *Grassmann Stein Variational Gradient Descent.* Submitted for review.

RESEARCH EXPERIENCE

- **Approximate Bayesian Computation with Optimal Transport**   Cambridge, UK
  Part III Essay; advised by Dr. Sergio Bacallado.   *Feb 2020 – May 2020*
    - Reviewed, both theoretically and methodologically, the use of optimal transport metrics and information metrics as discrepancy measures in Approximate Bayesian Computation (ABC). Metrics included the Wasserstein distance, Maximum Mean Discrepancy and KL-Divergence. R code to reproduce the experiments is available on Github.

- **Predicting Sepsis at Triage**   Toronto, Canada
  Summer Research Programme; supervised by Dr Anna Goldenberg and Mr Erik Drysdale.   *Jul 2019 – Aug 2019*
    - Used natural language processing, namely the BERT model, to build models that aid the diagnosis of Sepsis in early medical triage. Data were provided by the Emergency Department of the SickKids Hospital in Toronto, Canada.
    - Built a Python pipeline using PyTorch to implement these models for prediction of Sepsis as well as other diseases.

INTERNSHIP EXPERIENCE

- **JPMorgan Chase & Co.**   London, UK
  Off-Cycle Intern in Quantitative Research and AI & Machine Learning Programme   *Jul 2020 – Oct 2020*
    - Worked in Securities Services on discriminant analysis of equities data and liquidity analysis of fixed income.

EXTRACURRICULAR ACTIVITIES

- **Bridges for Enterprise**   Cambridge, UK
  Mentor and Global Analytics and Algorithm Manager   *Dec 2020 – Present*
    - Supervised a team of three on a machine learning project related to unbalanced assignment and NLP.

- **Imperial Mathematics Competition Committee**   London, UK
  Senior Event Coordinator and Co-Founder   *May 2017 – May 2019*
    - Led the publicity team and established partnerships with Maths societies from 11 UK universities within a month.

SKILLS AND COMPETENCIES

- **Languages**: Chinese Mandarin (Native); English (Professional); French (Basic).
- **Programming**: R, Python, PyTorch, TensorFlow, MATLAB (Proficient); Unix (Intermediate); C++ (Elementary).