Xing Liu

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Education

- **Imperial College London** — London, UK
  Bachelor of Science; Mathematics with Statistics. Grade: 90.2% (Top 5% in the Year Group) — *Oct 2016 – Jul 2019*
  - Gloucester Research Ltd Prize, 2018.
  - Faculty of Natural Sciences Deans List, 2017 and 2018.

Research Experience

- **Imperial College London** Undergraduate Research Opportunity Programme — London, UK
  Statistical Modelling for Streaming Data in R; supervised by Dr Din-Houn lau. — *Jun 2018 – Aug 2018*
  - Studied the recursive least-square algorithm, anomaly detection and abrupt change-point detection methods using both parametric and non-parametric test statistics. Examples included the CUSUMSQ charts, Kolmogorov-Smirnov test and Greenwald-Khanna algorithm. Wrote from scratch all R codes used and produced a 36-page report.
  - Funded by the Imperial College Mathematics Departmental UROP Bursary.
- **Imperial College London** Second Year Undergraduate Project — London, UK
  Steins Paradox; supervised by Professor Alastair Young. — *May 2018 – Jun 2018*
  - Worked in a team of five on decision and estimation theories. Project investigated estimators that dominate the James-Stein estimator in terms of the quadratic loss, including the Positive-part JS estimator and its extensions.
  - Checked the team progress periodically and produced 15 pages of a 47-page written report, covering 2 out of the 5 main subtopics; delivered a team presentation at a small conference with 40 attendees.

Publication

- **Bayesian Additive Regression Trees for Bayesian Quadrature (In preparation)** — London, UK
  SR Flaxman, Z Shen, R Kang, H Zhu, X Liu, W Jiang (Imperial College London)
  - We extend the existing BART model to an additive design one, which allows inference on the underlying function of given data sets to be made via an ensemble of weak models instead of a single strong model. We further show how this contributes to Bayesian Quadrature and argue that it has distinct advantages over Monte Carlo integration and Bayesian quadrature with Gaussian processes.
  - Paper in preparation for submission to ICML 2019.

Internship Experience

- **Oneway Group** A finance company that engages in investment management and trading — Beijing, China
  Trading Intern — *Aug 2017 – Aug 2017*
  - Took training courses on foreign exchange, including trading strategies and applications of various indicators.

Extracurricular Activities

- **Imperial Mathematics Competition Committee** — London, UK
  Senior Event Coordinator and Co-Founder — *May 2017 – present*
  - Led a team of 3 to petition UK/EU universities for collaboration; established partnerships with Maths societies from 11 UK/EU universities within a month. Competition attracted over 200 participants in its debut.
- **Imperial College AI Hack Committee** — London, UK
  Research Engineer — *Aug 2018 – Nov 2018*
  - Worked in a team of 6 to search for datasets that could be used as questions for the competition.
  - Implemented multiple regression methods to model the house sale price in Brooklyn, New York City, including GLM and Lasso regression; performed relevant analysis to produce sample solutions.

Skills and Competencies

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