Xinru Liu | Curriculum Vitae

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Education

Boston University **Boston, MA**
Doctor of Philosophy in Statistics *Sept 2019 - Present*

- Related coursework: Linear Model w/ App in R, Generalize Linear Model, Estimation Theory, Hypothesis Test, Probability Theory I, Stochastic Processes, Time Series & Forecasting.
- Qualifying Exam: *Applied Stat.*

Wheaton College **Norton, MA**
B.A. in Mathematics & Computer Science *Sept 2015 - May 2019*
Summa Cum Laude, GPA: 3.93

- Minor: Piano Performance
- Honors: Departmental Honors with Thesis; Phi Beta Kappa Ruth Redding Graduate Scholarship (2019); Wallace mathematics prize (2019); Fred Kollett Prize in Mathematics and Computer science (2019); Joseph M. and Susan Stample Paresky '68 Fellowship (2019); Wheaton Dean's List (Fall 2015 - Spring 2019). Helen Zoe Duncan Prize in Piano Performance (2017-2019)

Programming Capability

- **Proficient:** C/C++, Python, R, Unix Environment
- **Intermediate:** SQL, JavaScript, HTML & CSS, Mathematica
- **Typesetting:** Microsoft Office, LaTeX

Research Experiences

Mathematics Honors Thesis **Norton, MA**
Department of Mathematics, Wheaton College *Sept 2018 - May 2019*

- Built Hidden Markov Model on digitized music and compute the similarity between pieces from different composers.

NSF Summer REU at DIMACS in Data Analytics **Piscataway, NJ**
Department of Industrial and System Engineering, Rutgers University *May 2018 - Sept 2018*

- Developed a data fusion method that could effectively fuse the different sources of sensor data and process data to evaluate the quality of 3D-printed parts.
- Employed dimension reduction techniques (uncorrelated multilinear principal component analysis, etc.) for extracting spatial patterns from high-dimensional measurement images of 3D-printed dome-shaped objects.
- Trained a two-level classification model to guarantee time efficiency while maintaining high accuracy.

Lexomics Software Development Research **Norton, MA**
Department of Computer Science, Wheaton College *Jun 2017 - Sept 2017*

- Performed hierarchical agglomerative clustering analysis on tokenized texts and displayed the results in dendrograms. Employed exploratory analyses to check for errors and detect high-level patterns.

Publications

- **Gui X., Liu X., Qi T., Guo W.** (2018). Multimodal Data Fusion in 3D printing Quality. *IEEE Sensors Letters*, DOI 10.1109/LSENS.2018.2881475.

Work Experiences

Teaching Fellow **Boston, MA**
Department of Mathematics & Statistics, Boston University *May 2020 - Present*

Calculus and Introductory Statistics Tutor **Norton, MA**
Department of Mathematics, Wheaton College *Sept 2016 - May 2019*

Extra-curricular Activities

- Flute player in BU concert band.