

Kai Li

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EDUCATION

Stony Brook University

Stony Brook, NY

Doctor of Philosophy in Applied Mathematics and Statistics (Statistics Track)

August 2022 - May 2026

Master of Science in Applied Mathematics and Statistics (Statistics Track)

August 2020 - May 2022

Advanced Graduate Certificate in Operations Research

Advanced Graduate Certificate in Data and Computational Science (and Engineering)

Tentative GPA: 3.940/4.000

The Ohio State University

Columbus, OH

Bachelor of Science in Mathematics (Theoretical Track)

August 2017 - May 2020

Minor in Computer Information Science (Database Track)

GPA: 3.672/4.000

Minor in Economics (Theoretical Concentration)

SKILLS

Programming Languages: C, C++, Java, L^AT_EX, MATLAB, Markdown, Python, SQL, R, SAS, Stata

Software and Integrated Development Environments (IDEs): Eclipse, GitHub, Jupyter Notebook, Microsoft Visual Studio, Overleaf, RStudio, TeXworks

Languages: English - proficient, Mandarin Chinese - native, Cantonese - native

ACADEMIC PROJECTS

Department of Computer Science, Stony Brook University

Stony Brook, NY

Data Science - Understanding Flight Delays

August 2021 - December 2021

- Retrieved relevant flight arrival performance datasets of interests from the Bureau of Transportation Statistics.
- Preprocessed datasets by subsetting datasets, imputing missing data, merging datasets, and variable encodings.
- Obtained meaningful insights from the datasets by exploring descriptive statistics, testing significant variables, and visualizing data patterns and trends for model building.
- Implemented machine learning models, Ridge regression, k -nearest neighbors, and neural networks, to model the likelihoods of flight delays and compare their effectiveness.
- Presented the entire research process in a reproducible, tweakable, and well-documented notebook computing environment with an academic report.

Mathematical Biosciences Institute, The Ohio State University

Columbus, OH

Survival Analysis - Epidemic Modelling

September 2019 - April 2020

- Developed statistical methods to generate large-population samples from modeling epidemiological processes.
- Analyzed samples segregated into susceptible (S), infected (I), and recovered (R) compartments.
- Generated solutions using ordinary/partial differential equations, survival functions, or cumulative hazard functions.
- Computed the proportion of people susceptible or infected using computer software.
- Interpreted the awareness effect of spreading epidemics under Susceptible-Infected-Recovered (SIR) curves.

Kaggle Competitions (<https://www.kaggle.com/>): Microsoft Malware Prediction and Rossmann Store Sales

PMLi R Package: Statistical procedures in R to analyze partially matched samples - an experimental design based on independent samples and matched pairs designs.

EXPERIENCE

Department of Mathematics, The Ohio State University

Columbus, OH

Math Peer Mentor - Four Students in Total

August 2018 - April 2020

- Identified possible barriers that students may have on personal, academic, or other problems during the first year to avoid transition issues and adjusting to college life.
- Fostered a sense of community for students and motivated them to utilize campus and community resources.
- Encouraged interpersonal and group interactions among mathematics and actuarial science students to actively participate in volunteering math competitions.

RELEVANT COURSEWORK

Statistics: Exploratory and Categorical Data Analysis, Regression Analysis, Time Series Analysis

Computer Science: Data Science, Database Systems, Algorithms, Computer Architecture, Operating Systems

Economics: Econometrics, Microeconomic Theory, Macroeconomic Theory