Wei Jiang

CONTACT INFORMATION

360 Huntington Ave
Boston, MA 02115

jiang.wei2@northeastern.edu
Personal Website

RESEARCH INTERESTS

functional data analysis, mathematical modeling, statistical genetics

EDUCATION

Northeastern University — Boston, MA
M.S in Applied Mathematics, GPA: 4.0/4.0 — Jan 2022 - May 2024

The Hong Kong University of Science and Technology — Hong Kong SAR, China
B.Sc in Computer Science and Applied Mathematics — Sep 2017 - May 2021

- Second Class Honours (Division One)
- Dean's List

CONFERENCE PRESENTATIONS

[Under Review] Martens, A., **Jiang, W.**, Rogers-Vizena, C., Eichler, F., Lopez-Pintado, S., & Zimmerman, E. (2025). Utilizing Functional Data Analysis to Examine Infant Suck Development Across Clinical Populations. Abstract submitted at the *Pediatric Academic Societies (PAS) Annual Meeting*, Honolulu, HI.

Martens, A., **Jiang, W.**, Rogers-Vizena, C., Lopez-Pintado, S., & Zimmerman, E. (2024). Variability in Sucking Patterns in Infants with Cleft Lip and/or Palate. Abstract accpeted at the *The 2024 American Speech-Language-Hearing Association (ASHA)*, Seattle, WA. [Poster]

RESEARCH EXPERIENCE

Northeastern University, Boston, MA, USA

Statistical analysis research assistant — July 2023 - present
Supervised by Professor Sara Lopez-Pintado

- Functional Data Analysis on Non-Nutritive Sucking to Investigate Infant Development
  - Conducted Multilevel Principal Component Analysis to address spectral variability among cleft lip/palate groups, incorporating age as a factor.
  - Applied modified band depth and extreme depth methods to perform envelope tests, formally assessing population differences.
- Analyzed multivariate biosensor data using functional data analysis to characterize behavioral changes before and after aggressive pulses.
- Simulated a Susceptible-Infectious-Susceptible (SIS) model within a highly clustered small network, using a functional depth approach to quantify the unpredictability.

The Hong Kong Polytechnic University, Hong Kong SAR, China

Research assistant — Sep 2021 - Dec 2021
Supervised by Professor Hui Lai-Ling

- Conducted Mendelian Randomization studies associated with Brain-Aging from GWAS.
- Utilized Mendelian randomization-Egger (MR-Egger) to justify the potential pleiotropy effect.
- Implemented Lambda-Mu-Sigma (LMS) model and quantile regression to provide normalized reference centile curves.

WORKING EXPERIENCE

Camp4 Therapeutics, Cambridge, MA, USA

Computation Biology Co-op — Jan 2023 - June 2023

- Developed the Machine Learning classification model specific for long non-coding RNA(lncRNAs).
- Utilized fine-tuned Large Language Model(LLM) to extract underlying sequence-level features.
- Improve model's performance and Interpretability by parameters tuning and SHAP.

HKUST-Bright Dream Robotics Joint Research Institute, Foshan, China

Computer Vision Engineer Intern Jun 2021 - Aug 2021

Developed Convolutional Neural Network Object Classification Model for CAD images.

Selected Projects

Viral Kinetic Modeling of COVID-19 (ODE Models) [PDF]
Implemented a target cell limited Model with adaptive immune effect to quantify and visualize the infection mechanism of COVID-19 on a French Cohort Study for MATH-5101 course project.

A Visualization of Knowledge Graph on COVID-19 [Code]
Implemented a Neo4j graph database and Heterogeneous Network Graph from scraped bioRxiv.

Pulse of HKUST: Data Visualization (Data Analysis, Data Visualization [Web]
Created a visualization of a spatiotemporal dataset (WIFI-logs) using a social-strength entropy-based model.

Teaching Experience

Bouvé College of Health Sciences, Northeastern University, Boston, MA, USA

Teaching Assistant 2023-2024
PHTH 2210 Introduction to Biostatistics

Department of Mathematics, Northeastern University, Boston, MA, USA

Teaching Assistant Fall 2022
MATH 3801 Probability and Statistics

Honors and Awards

Outstanding Co-op Performance, Northeastern University 2024

Outstanding Academic Achievement Award, Northeastern University 2023

University's Scholarship Scheme for Continuing Undergraduate Students, HKUST 2017-2020

Skills

- Programming Languages: Python/R/Matlab/SQL/BASH/C++/JavaScript
- Data & Statistical Analysis: PyTorch/Scikit-learn/OpenCV/dplyr/Gamlss/Jupyter Notebook
- Visualization: ggplot/RshinyApp/seaborn/matplotlib
- Tools: GIT/AWS/Unix/Docker/LaTeX