Jiakun Li

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Education

University of Minnesota Twin Cities • Minneapolis, MN — August 2023 – Current
Ph.D. in Biostatistics • GPA: 4.0/4.0

College of William & Mary • Williamsburg, VA — August 2019 – May 2023
B.S. in Mathematics • GPA: 3.98/4.0 • *summa cum laude*

Research & Work Experience

Graduate Research Assistant – University of Minnesota — August 2023 – Present
Minneapolis, MN

- Conduct analysis on UKBiobank GWAS data of up to 500,000 samples and 15,000+ biomolecules to discover causal genes, proteins, and other risk factors for Alzheimer's Disease.
- Use R, PLINK, GCTA to perform quality control and joint analysis of GWAS summary statistics.
- Proficient in command line and shell scripting.

Undergraduate Independent Research – College of William & Mary — Feb 2022 – May 2023
Williamsburg, VA

- Use a stage structured matrix model to investigate the effects of density dependence and annual catch distribution on Chesapeake Blue Crab population dynamics.
- Use stochastic agent-based models and a custom Metropolis-Hastings algorithm to analyze survival and growth data to estimate parameters of the model.
- Use R language to code the model, perform sensitivity analysis, and visualize model output.

Undergraduate Research Assistant – College of William & Mary — Apr 2022 – May 2023
Williamsburg, VA

- Use various machine learning methods including dimensionality reduction, clustering, and time series analysis to investigate the bimodality of neural responses of the Honey Bee antennal lobe.
- Code differential equation models and data visualization in MATLAB and Python.

Publication

- **J. Li**, A. C. Hyman, J. Shi, R. Lipcius (2024, in prep) Density-dependent matrix-based modeling of blue crab *Callinectes sapidus* population dynamics in the Chesapeake Bay.
- **J. Li**, R. Iaci, M. Patel (2024, in prep) A Novel Classification Method of Neural Response to Mechanosensory Stimuli in the Honey Bee Antennal Lobe.

Presentation & Poster

- **J. Li**, Density Dependent Matrix-Based Modeling of Blue Crab Callinectes sapidus Population Dynamics in the Chesapeake Bay. 115th Annual Meeting of the NSA (National Shellfisheries Association). Baltimore, MD. March 27th, 2023
- **J. Li**, Research Project Presentation: Blue Crab population modelling. W&M Biomath Research Meeting. William & Mary, November 15th, 2022
- **J. Li**, A Density-Dependent Stage Structured Population Model of the Chesapeake Blue Crab. W&M Summer 22' Applied Math Research Seminar. William & Mary, July 7th, 2022.

Awards & Honors

- Dean's Ph.D. Scholar's Award
- Phi Beta Kappa
- William & Mary Cissy Patterson Prize
- W&M Summer REU Program Research Fellowship

Relavent Coursework

- Graduate level: Statistical Theory I, Statistical Theory II (*Spring 2024*), Advanced Regression Analysis, Probability Theory, Mathematical Statistics, Statistical Learning
- Undergraduate: Statistical Data Analysis, Real Analysis, Linear Algebra & Vector Spaces.

Programming & Technical Skills

- R, Python, MATLAB, Wolfram Mathematica, LaTeX, RMarkdown, Shell Script.
- Microsoft Office Suite (emphasis on Excel, Word, Powerpoint).