Wenxuan Jiang

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GitHub: https://github.com/wjianga
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Education

The University of Texas at Austin, Austin, TX — Aug 2019 - Dec 2022
Bachelor of Science in Mathematics; GPA: 3.96/4.00
Certificates: Elements of Computing, Applied Statistical Modeling, Computational Science and Engineering, Scientific Computing and Data Science

Relevant Coursework: Intro to Mathematical Statistics, Intro to Stochastic Process, Statistical Learning and Inference, Applied Regression and Time Series, Generalized Linear Model, Linear Algebra/Matrix Theory, Elements of Software Design(Data Structure and Algorithm), Elements of Software Engineering(Python), Elements of Database, Elements of Data Science

Honors and Awards

Excellence in Statistics, Data Science and Computational Biology, UT Austin	Spring 2022
College Scholars, Honors Day, UT Austin	Spring 2022
University Honor (6 semesters), UT Austin	Fall 2019 - Spring 2022
Distinguished College Scholars, Honors Day, UT Austin	Spring 2021
Second Year Excellence Award, College of Natural Science, UT Austin	Spring 2021
Inventors Choice Award, Undergraduate Research Forum, UT Austin	Spring 2021

Research experience

Department of Oncology, Dell Medical School, UT Austin — Jan 2020 -
Undergraduate Research Assistant
Advisor: Professor Dhivya Arasappan, Dr. Jeanne Kowalski-Muegge
- Analyze large-scale Multiple Myeloma Whole Exome Sequencing and RNA-seq data generated by Next-Generation Sequencing by using various bioinformatics pipelines
- Run computationally expensive programs in parallel using High-Performance Computing facilities at Texas Advanced Computing Center
- Formulate ad hoc design and scripts in Python, Bash, and R based on disparate data and research questions
- Communicate and present research work on undergraduate research showcases
- Design and deploy a Shiny R web application to communicate mutational characterization of Multiple Myeloma cell lines

Oden Institue, UT Austin — Dec 2021 - June 2022
Undergraduate Research Assistant
Advisors: Dr. Radek Bukowski, Dr. Karl Schulz
- Construct Bayesian Network model on large-scale pregnancy-related mortality dataset using Jupyter Notebook and High-performance Computing facilities at TACC
- Predict the probability of stillbirth and neonatal death and aid in finding the optimal mode of delivery for personalized medical decision
- Read API and source code to document usage of open-source statistical packages in Python

- Devise querying Python scripts that build on Pomegranate package to look up conditional probability in JSON files.

Academic Projects

Directed Reading Program in Mathematics Fall 2021
Mentor: Luhao Zhang
Learned binomial pricing model, and how mathematics concepts like Markov chain, martingale properties, etc are used to price European options by reading the book *Stochastic Calculus for Finance I*. Presented the work at the end of the semester.

Inventor Program Practicum, Rod Pump Optimization Fall 2020
Advisor: Dr. Jesse Pisel
- Adopt predictive models to predict rod pump failure and save operation cost of ConocoPhillips
- Implement regression methods to predict rod pump failure time and classification algorithms for classifying failure rod pump status using Sci-Kit Learn
- Communicate and visualize data using Tableau and provide business insights

Presentations

An Interactive Shiny R Dashboard for Characterizing Multiple Myeloma Cell Lines
Gulf Coast Undergraduate Research Symposium, Rice University
Computational Applied Mathematics and Operations Research section Oct 2022
Characterizing Multiple Myeloma Cell Lines
Undergraduate Research Forum, College of Natural Science, UT Austin April 2022
Characterizing Cancer Cell Lines w/ a Shiny R app
UGS Undergraduate Research Showdown, UT Austin Feb 2022
Rod Pump Optimization
Undergraduate Research Forum, College of Natural Science, UT Austin April 2021
Identifying expressed mutations in multiple myeloma
Undergraduate Research Forum, College of Natural Science, UT Austin April 2021
Expressed Mutations to Neoantigens
UGS Undergraduate Research Showdown, UT Austin Feb 2021
Characterizing Multiple Myeloma Cell Lines
TACC Symposium for Texas Researchers, UT Austin
https://repositories.lib.utexas.edu/handle/2152/84499 Sept 2020

Work experience

Texas Institute for Discovery Education in Science, UT Austin Sept 2022 -
Undergraduate Research Assistant
Advisor: Dr. Kathryn Hendren
- Perform data processing, transformation, merging, and creating new variables using R based on institutional survey data
- Generate descriptive statistics using Microsoft Excel and summarize results in data table reports
- Conduct Propensity Score Matching on observational data to evaluate the impact of an undergraduate research program on College of Natural Science students' graduation rate
- Perform Two-sample t-tests and Chi-squared Test of independence for hypothesis testing on the difference in proportions of two student groups

Department of Mathematics, UT Austin Feb 2022 - May 2022
Undergraduate Mathematics Grader
Course Instructor: Professor Gustavo Cepparo
Grade M378K Intro to Mathematical Statistics students homework weekly

Skills and Qualifications

Computational

R, ggplot2, dplyr, R shiny, Python, pandas, numpy, Bash, Swift, SQL and NoSQL, LaTeX, Git, GitHub, Gitlab, Tableau, High-Performance Computing

Languages

Fluent in English, Native in Chinese