Yuhan Zhang

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Education

University of Washington Seattle, WA
M.S. in Biostatistics Sep. 2025 – Jun. 2027 (Expected)
University of Washington Seattle, WA
B.S. in Statistics: Data Science, with Departmental Honors | **GPA**: 3.84/4.00 Sep. 2021 – Jun. 2025

Research Experiences

Classifying Musical Moods using Statistical Methods Sep. 2024-Present
Honors Research Student, supervised by Dr. Emanuela Furfaro, UW

- Analyzed specific music genres using music feature data from Spotify API
- Add a third dimension to the two-dimensional Thayer's model to achieve better mood classification accuracy—ongoing
- Create a model to classify the mood of selected music tracks based on specific musical features—ongoing

Predicting Number of Influenza Cases using Time Series Model July 2024-Sep.2024
Research Participant, supervised by Dr. Peter Kempthorne, MIT

- Used ETS and SARIMA models to fit the time series data of influenza cases in China and predict the number of cases for the next year
- Evaluated model performance based on accuracy and chose the ETS(M, A, M) model as the final prediction model

Made presentations and worked a detailed paper to introduce the research outcome (manuscript in preparation)

Teaching Experiences

TA for Biost 310: Biostatistics for the Health Sciences (AU 25, WI 26)

- Grading weekly homework, discussion section activities, and leading discussion section.

Internship Experiences

Phase I Clinical Research Center, People's Hospital of Zhengzhou Zhengzhou, China
Data Analyst Intern July 2024-Aug. 2024

- Supplemented the hospital's digital database with data from paper records, ensuring accuracy and completeness
- Participated in the design and scheduling of experimental protocols and assisted in the execution of clinical trials
- Conducted re-analysis of experimental data and validated outcomes using R and stochastic statistical models

Nodewell Technology Co., Ltd Beijing, China
Web Engineer Intern June 2022-Aug. 2022

- Updated the company's webpage and each subpage based on existing structure using HTML and CSS
- Implemented new elements within the original structure to accommodate image insertion and format changes
- Standardized product detail pages, ensuring consistency across all product information

Academic Projects

Reevaluation: Efficacy of the BNT162b2 mRNA Covid-19 Vaccine with MOM and MLE Methods
May 2024-June 2024

- Validated the efficacy of the vaccine through a hypothesis test, using the provided dataset
- Created a data frame in R to facilitate the subsequent bootstrap method and empirical P-value calculation
- Used the MOM to compute the estimator and used the bootstrap method to construct a 95% confidence interval
- Computed the empirical p-value through hypothesis testing, to verify the vaccine's effectiveness

Vaccine Reservation Management System Sep. 2023-Dec. 2023

- Developed the system using Java, which included the creation and login of users, updating the availability of vaccines and dates, and allowing patients to make appointments according to date and vaccine name
- Utilized SQL for data storage and updates, including creating and designing databases, converting user input into SQL statements, and using SQL statements to query or update data in the online database

Memory Management System Sep. 2022-Dec. 2022

- Developed a memory management program in C to realize GetMem and FreeMem functions, for allocating and freeing memory according to user needs
- Applied heap sort algorithm to effectively manage used and unused memory spaces, and returned statistical data of memory usage when necessary

Maze Generator and Solution Apr. 2022-June 2022

- Created a maze generator by implementing Kruskal algorithm in Java
- Utilized Kruskal and Dijkstra algorithm to generate the shortest path solution for the mazes

Competition

2024 MCM: How Tennis Momentum Shifts During Matches Feb. 2024

- Collaborated with a team to investigate the "momentum" phenomenon in tennis matches and attempted to predict the outcomes through modeling
- Adopted linear regression models to depict the flow of momentum during matches, and utilized a logistic regression model to predict the points won between players
- Used R to complete model fitting and data visualization, and drafted a report to present our solution

Activities

Soprano (Soprano II), **UW Choirs** Jan. 2022-Present

- Attend in weekly rehearsals and quarterly concerts, performing as a soprano in SATB or Soprano II in SSAA

Volunteer, **Department of Statistics Graduation Ceremony, UW** June 2024

- Assisted in setting up the items and tasks needed for the ceremony, including check-in, preparing and setting up refreshments, and cleaning up the venue

Soprano (Soprano II), **MOTE Choir: a local Chinese choir** Dec. 2021-Dec. 2022

Additional Information

- **Computer Skills**: Java (3 yrs); R (3 yrs); C (2 yrs); HTML, CSS, JavaScript (2 yrs); SQL (1yr)
- **Languages**: Chinese (Native); English (Proficient); Japanese (Elementary)
- **Interests**: Singing, Games (3rd in the women's division for the game maimai, WEC 2024 West Regional Division)