Tianle (Steven) Chen

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EDUCATION

University of Wisconsin-Madison   Madison, WI
Bachelor of Science: **Mathematics**, **Statistics**   September 2021-December 2024
- GPA: **3.9**/4.0, Honors: **Dean's List** for 4 Semesters, **Successful Participant Award** for COMAP 2024(Advisor: Saverio Spagnolie, Amy Cochran)

PUBLICATION

- Chunmei Li, **Tianle Chen**, Huimin Chen, etc. Temporal trend in early-onset colorectal cancer incidence and case numbers among individuals aged 45-49 during 2001-2019: implications for the colonoscopy screening -- Pending publication

RESEARCH & ACADEMIC PROJECTS

Madison Experimental Mathematics Lab: Numerical Study of Kakeya Maximal Inequlities   Madison, WI
Research Assistant supervised by Prof. Terence Harris   September 2024-present
- Conducted in-depth review of the Kakeya maximal function conjecture, focusing on both 2D and 3D scenarios
- Designed and implemented numerical simulations for 3D tubes using spatial hashing techniques
- Adapted methodologies for 2D cases to refine algorithms based on resolved conjecture cases
- Utilized MATLAB, Python (NumPy, SciPy, Matplotlib), and CGAL for complex geometric computations
- Documented and tested all methods to ensure simulation accuracy against known theoretical outcomes

Gender and Racial/Ethnic Disparities of Early-onset Colorectal Cancer by Anatomical Sites, Histological Types, and Disease Stages in the United States during 2001-2019   Remote
Research Assistant supervised by Shihua Wang, Ohio State University   June 2022-August 2023
- Extracted and prepared data from SEER*Stat for analysis, with a focus on early-onset colorectal cancer
- Conducted preliminary statistical calculations, including mean and variance, to understand data distributions
- Developed graphics to detect critical patterns and trends
- Utilized SAS software for statistical analysis, evaluating data using p-values
- Helped identify crucial areas for further research and discussion in thesis development

Regression Model Design for Human Bodyfat Prediction   Madison, WI
Group Project supervised by Prof. Hyunseung Kang   September 2023 – November 2023
- Imported dataset into RStudio and detected outliers using Cook's distance, leverage point, and IQR analysis
- Assessed dataset normality, homoskedasticity, and linearity using qqplot and residual plot
- Explored regression models, including Simple Linear Regression (SLR) and Multiple Linear Regressions (MLRs)
- Conducted literature review to identify and incorporate predictors that balance robust prediction capabilities with simplicity for practical daily use
- Performed F-test to evaluate and compare regression models and select the most effective ones
- Achieved a high-performing final model with an R-square exceeding 0.7 and (RMSE) of 4.08

Algebra/Probability (Directed Reading Program)   Madison, WI
Participant   February 2024 – May 2024
- Explored advanced mathematical concepts under the guidance of a graduate student mentor, focusing on the Free Central Limit Theorem (FCLT) from "Lectures on the Combinatorics of Free Probability"
- Acquired knowledge beyond the standard curriculum, delving into non-commutative algebra and its probability space
- Presented findings on FCLT in the final program presentations

Stars and Planets Data Analyzation   Madison, WI
Group Project   November 2023
- Used Python and Jupyter Notebook to process JSON and CSV data into structured data frames and developed functions to handle missing data
- Created graphs such as scatter plots and pie charts for data visualization and analysis of astronomical data
- Applied astrophysical formulas to identify potential habitable planets and predict star and planet characteristics

Wordle Game   Madison, WI
Individual Project   May 2022

- Utilized Java programming language in IntelliJ to develop a Beginner-level wordle game
- Implemented techniques including ArrayList management, pseudorandom number generation, and robust error-handling mechanisms to guarantee seamless user interaction and error-free gameplay experience

PROFESSIONAL EXPERIENCE

Outlier AI.   Remote
Intern   April 2024-present
- Analyzed and assessed the accuracy and quality of responses generated by AI models for given mathematical problems
- Implemented corrections and enhancements to refine and adjust AI-generated responses
- Utilized advanced mathematical knowledge and LaTeX formatting to improve the clarity and correctness of model outputs
- Assisted in updating and refining algorithms to better address complex mathematical problems

China Mobile Sichuan Corp.   Chengdu, China
Marketing Analyst   May 2023 – June 2023
- Analyzed carrier service marketing data for personal cellular phone plans using advanced Excel techniques
- Conducted data analysis to identify market trends, customer preferences, and pricing strategies, optimizing cellular phone plans and maximizing customer satisfaction
- Collaborated with cross-functional teams to implement data-driven price adjustments and promotional campaigns

EXTRACURRICULAR ACTIVITIES

Burkard Lab, UW-Madison Department of Medicine   Madison, WI
Lab Assistant   January 2023 – May 2023
- Maintained the functioning of Burkard Lab by providing support to lab operations
- Gained hands-on experience in various general lab techniques, including autoclaving, restocking materials for breast cancer research, and preparing chemical solutions and buffers

UnityPoint-Meriter   Madison, WI
Clinical Shadowing Assistant   October 2022 – December 2022
- Shadowed a UW-Health Professor specializing in colon & rectum surgery
- Participated in clinical settings, closely observing and assisting the surgeon during patient consultations, gaining practical communication skills with patients, physicians, and rotating medical students

McBurney Disability Resource Center, UW-Madison   Madison, WI
Notetaker   June 2022 – July 2022
- Provided notetaking support for the History 130 course, assisting students with learning disabilities
- Utilized advanced techniques within Windows Word to format and enhance notes, adhering to specific guidelines to optimize readability and utility for students with diverse learning needs

ADDITIONAL INFORMATION

Technical: Python, R/RStudio, SAS, SQL, LaTex, Microsoft Office, Java, VB/VBScript, HTML
Certificate: Basic Life Support Provider (eCard Code: 235411670163, American Heart Association, Dec 2022-Dec 2024)
Languages: English (Fluent), Chinese (Native), German (Beginner)