Tianle (Steven) Chen

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EDUCATION

Duke University Durham, NC
Master of Science: **Statistical Science** August 2025 – May 2027

University of Wisconsin-Madison Madison, WI
Bachelor of Science: **Mathematics**, **Statistics** September 2021 – December 2024

- GPA: **3.877**/4.0, Honors: **Dean's List** for 4 Semesters, **Successful Participant Award** for COMAP 2024(Advisor: Saverio Spagnolie, Amy Cochran)

PUBLICATION

- Li C, **Chen T**, Chen H, et al. Temporal Trends in Colorectal Cancer Incidence and Case Numbers among Individuals Aged 45-49 in the US During 2001-2019. *Cancer Control*. 2025;32. doi:10.1177/10732748251327715

RESEARCH & ACADEMIC PROJECTS

Topo-Learning Lab: Machine Learning Study for Topological Images of Alzheimer's Brain Scans Durham, NC
Research Assistant supervised by Prof. Tananun Songdechakraiwut October 2025 – Present

- Utilize Topo-Transformed Images for Early Alzheimer's Detection
- Use PyTorch and other methods including regression and neural network for handling those images

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 – April 2025

- 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 and publication

Madison Experimental Mathematics Lab: Numerical Study of Kakeya Maximal Inequalities Madison, WI
Research Assistant supervised by Prof. Terence Harris September 2024 – December 2024

- Conducted an in-depth review of the Kakeya maximal function conjecture, focusing on 3D scenarios
- Designed and implemented numerical simulations for 3D tubes using spatial hashing techniques
- Adapted methodologies to refine implemented Greedy algorithms based on resolved conjecture cases
- Utilized MATLAB and Python (NumPy, SciPy, Matplotlib) for complex geometric computations
- Documented and tested all methods to ensure simulation accuracy against known theoretical outcomes

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

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

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

PROFESSIONAL EXPERIENCE

Outlier AI. Remote
Intern. April 2024-September 2024

- 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: MATLAB, 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)