Curriculum Vitae

Zekun (Bill) Wang
Department of Statistics,
University of Wisconsin–Madison
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Education

- University of Wisconsin–Madison (Wisconsin, USA) Sep 2023 – Present
  Master of Science in Statistics and Data Science (MSDS).
  Co-advisors: Prof. Joshua Cape and Prof. Vivak Patel.
- University of Wisconsin–Madison (Wisconsin, USA) Sep 2022 – May 2023
  Visiting International Student Program in Statistics (Statistics-VISP).
  Co-advisors: Prof. Joshua Cape and Prof. Vivak Patel.
- Xiamen University (Fujian, China) Sep 2019 – Jun 2023
  Bachelor of Science in Statistics (International Experimental Class).

Positions

- Research Assistant Jan 2023 – Present
  Prof. Vivak Patel, Department of Statistics, University of Wisconsin–Madison.
- Research Assistant Dec 2022 – Present
  Prof. Joshua Cape, Department of Statistics, University of Wisconsin–Madison.
- Project Assistant Jan 2021 – Feb 2021
  Prof. Jianan Li, WISE & SOE, Xiamen University (Excellent Award).

Research Interests

- Statistical Machine Learning
- Statistical Network Analysis
- Numerical Optimization
- Econometrics

Manuscripts

- Vivak Patel and **Zekun Wang**
  Stopping Criterion for Stochastic Gradient Descent (In preparation).
- Joshua Cape and **Zekun Wang**
  Conference Network Analysis (In preparation).

Talks

- Co-presentation Network Analysis Nov 2023
  Ph.D. student group of Prof. Joshua Cape, University of Wisconsin–Madison.
- Stopping Criterion for Stochastic Gradient Descent Jun 2023
  Ph.D. student group of Prof. Vivak Patel, University of Wisconsin–Madison.
- An Introduction to Conference Network Data May 2023
  Ph.D. student group of Prof. Joshua Cape, University of Wisconsin–Madison.
- An Introduction to Data Mining Oct 2021
  Graduate student group of WISERCLUB, WISE & SOE, Xiamen University.

Leadership

- Vice president of the undergraduates of WISERCLUB (Xiamen University) May 2022 – May 2023
  WISERCLUB is a data science learning group organized by Prof. Wei Zhong (Chair of the Department of Statistics, WISE & SOE) and Prof. Haiqiang Chen (Chair of the Department of Finance, WISE & SOE).

Awards

- Academic Excellence Award (USA) Aug 2023
  Department of Statistics, University of Wisconsin–Madison (Individual).
  Scholarship for the MSDS program based on the performance in the Statistics-VISP program.
- The 13th Chinese Mathematics Competitions (China) Dec 2021
  Provincial first prize (Individual).
  Participated in an advanced mathematics contest covering topics including calculus and linear algebra.
- Contemporary Undergraduate Mathematical Contest in Modeling (China) Dec 2021
  Provincial first prize (Team captain).
  Conducted operational research in the ordering and transportation decisions in manufacturing enterprises.
- The "Challenge Cup" of National College Students (China) Jul 2021
  Provincial first prize (Team member).
  Applied deep learning GAN model to colorize images taken by the C-band SAR satellite HISEA-1.

Interdisciplinary Projects

- Algorithmic Trading Apr 2022 – Jul 2022
  I conducted research as a member of a research group supervised by Michael Zhao, an esteemed individual who obtained his Ph.D. from MIT Sloan. Our research project initially focused on the design and evaluation of automated trading strategies for stocks. More specifically, my responsibilities included training ARIMA models and rigorously assessing their performance through a nested cross-validation procedure, effectively validating their efficacy in out-of-sample scenarios. Our research endeavors culminated in the synthesis and presentation of our findings in a scholarly research paper titled *ARIMA, Prophet, and LSTM for ETF Prediction.*
- Environmental Economics Mar 2022 – Jun 2022
  I engaged in research as a member of a research group under the guidance of Ellie Beaudry, a Ph.D. candidate at Harvard University specializing in atmospheric chemistry and modeling. Our research endeavors centered around investigating the interplay between economic development and improvements in air quality. Through a collaborative effort, we successfully completed a comprehensive research paper and project, which underwent multiple iterations and refinements. Notably, I played an active role in seeking innovative solutions, including automating the process of satellite data retrieval. Our research findings were effectively summarized and presented in a research paper titled *The better the air quality, the more developed the economy?*
- Clinical Biomedicine Jun 2021 – Mar 2022
  I conducted a research study in collaboration with Ph.D. students and medical professionals from the Department of Family Planning at the Women and Children's Hospital, School of Medicine, Xiamen University. The research aimed to compare the treatment outcomes of hysteroscopy with tubal catheterization and traditional hysterosalpingography. The findings of our study were summarized and presented in a research paper titled *The Clinical Effect of Hysteroscopic Tubal Catheterization and Hydrotubation for Patients with Tubal Infertility.*
- Healthcare Aug 2021 – Nov 2021
  I independently pursued research under the mentorship of Robin Singh, a scholar with a Ph.D. degree from MIT and expertise in data science. My research endeavors centered around utilizing neural networks to predict the spread of COVID-19. We employed a feedforward neural network architecture consisting of linear nodes, and we applied cross-validation for parameter tuning purposes. In addition to conducting extensive experiments and analysis, I documented my research findings in a comprehensive research paper titled *Making Predictions on the Spread of COVID-19 based on Neural Network.*
- Cognitive Neuroscience Jul 2021 – Oct 2021
  I participated in a research group led by Nancy Chai, a distinguished developmental cognitive neuroscientist at MIT. Our research focused on employing sophisticated data analytic models, including multivariate regression, moderation analyses, and neural networks, to investigate the key variables that are strongly correlated with educational achievement. Through this collaborative effort, we aimed to gain deeper insights into the complex factors that influence academic success. The findings of our research were summarized and documented in a scholarly paper entitled *Exploring Factors Influencing Academic Performance from Demographic, Socio-emotional and Cognitive Perspectives: a Study Based on High School Students in Boston.*
- Natural Language Process Jul 2021 – Sep 2021
  I engaged in a research group under the guidance of Gary Becigneul, a prominent figure in the field of fintech

and co-founder of the startup Gematria Technologies. Our research project centered around the development of an innovative approach for emoji-controlled dialogue generation utilizing a pre-trained GPT-3 model on Reddit data. Throughout the project, we worked collaboratively, analyzing the data, designing algorithms, and implementing the dialogue generation system. To document our findings, we composed a research paper that encapsulated the essence of our work titled *Emoji-Controlled Dialogue Generation.*

Programming

- Advanced proficiency: *Python, Julia, R, MATLAB, SQL, Linux, HPC/HTC, LaTeX.*
- Intermediate proficiency: *C, C++, Java, HTML, CSS, JavaScript.*

Hobbies

- Sports
  Member of the basketball team of the Department of Statistics, WISE&SOE, Xiamen University, 2019-2022.
  Member of the kickball team of Department of Statistics, University of Wisconsin–Madison, 2023-Present.
  Amateur-level skills in swimming, ping-pong, badminton, and volleyball.
- Music
  Good at guitar and a little bit piano.