Yanwei(Yana) Jin

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Education

University of Minnesota, Twin Cities Minneapolis, MN, USA
Master of Science in Biostatistics (GPA: 3.426/4.0) Sep 2024 – Jun 2026 (Expected)
Minor in Computer Science
Relevant Coursework: Theoretical Statistics I & II (PhD-level), Biostatistical Inference I & II, Survival Analysis, Machine Learning

Peking University Beijing, China
Bachelor of Science in Nursing Sep 2017 – Jul 2022
Selected Coursework: Calculus, Linear Algebra, Probability & Statistics

Research Experience

Sepsis Early Prediction in the Emergency Department University of Minnesota
Research Assistant, Advisor: Dr. Feng Xie Nov 2024 – present

- Processed and analyzed over 2 million **EHR** records across M Health Fairview, BIDMC, and Stanford Health Care systems.
- Developed the interpretable **Emergency Sepsis Risk Prediction (ESRP)** score using the AutoScore framework, demonstrating superior performance relative to existing clinical tools.
- Applied **causal inference** methods to investigate the associations between sepsis phenotypes and treatment strategies.
- Contributed to the multi-task disease prediction project, including modeling disease relationships and preparing manuscript drafts, tables, and figures.

Drug Overdose Trends and Naloxone Distribution Modeling University of Minnesota
Research Assistant, Advisor: Dr. Xiao Zang Oct 2024 – Present

- Conducted **descriptive epidemiological analyses** of U.S. drug overdose mortality (1999–2023) by region, age, race, and drug type using CDC WONDER data, with a particular focus on older Black adults who experience limited access to healthcare.
- Examined post-2023 trends in overdose mortality using **joinpoint regression** to assess potential declines in national and subgroup rates.
- Applied the **BayCANN** Bayesian calibration framework to fit a microsimulation model evaluating naloxone distribution strategies in Massachusetts and Minnesota.
- Prepared data request specifications and organized relevant datasets to support downstream modeling and analysis.

Cuff-less Blood Pressure Estimation COCHE, Hong Kong
Research Assistant, Advisor: Prof. Yuanting Zhang Jan 2023 – Aug 2024

- Collected, preprocessed, and extracted features from multimodal physiological signals (ECG, PPG, IPG) for wearable health monitoring.
- Developed the **McBP-Net** model for continuous BP estimation with **IEEE Grade A** accuracy.
- Contributed to projects on physiological signal modeling, including glucose monitoring, seizure prediction, and cardiovascular risk assessment, as well as early-stage wearable device prototyping.

Work Experience

Chief Operating Officer, DonuTech Limited Dec 2023 – Present
Co-founded a Hong Kong–registered medical technology startup focused on wearable physiological sensing and clinical AI applications.

Nurse Trainee, Peking University First Hospital Jul 2021 – May 2022
Rotated across internal medicine, surgery, obstetrics and gynecology, and pediatrics.

Publications

Published / Accepted

1. **Y. Jin***, T. Xiang*, Z. Liu, L. Clifton, D. Clifton, N. Ji, Y. Zhang. "Dynamic Beat-to-Beat Measurements of Blood Pressure Using Multimodal Physiological Signals and a Hybrid CNN-LSTM Model" *IEEE Journal of Biomedical and Health Informatics (JBHI)*, 2025. (*co-first author*)
2. S. Zhou, W. Xie, J. Li, Z. Zhan, M. Song, H. Yang, C. Espinoza, L. Welton, X. Mai, **Y. Jin**, Z. Xu, Y.-H. Chung, Y. Xing, M.-H. Tsai, E. Schaffer, Y. Shi, N. Liu, Z. Liu, R. Zhang. "Automating Expert-Level Medical Reasoning Evaluation of Large Language Models." *npj Digital Medicine*, 2025. (Accepted)
3. T. Xiang, Z. Liu, **Y. Jin**, N. Ji, Y. Zhang. "Wearables Cardiovascular Monitoring: Effects of Cold Pressor Test on HR Estimated From ECG, PPG, and IPG Signals." *Journal of Robotics & Automation*, 2024.
4. H. Chen, L. Lyu, Z. Zeng, **Y. Jin**, Y. Zhang. "Beat-to-Beat Continuous Blood Pressure Estimation with Optimal Feature Sets of PPG and ECG Using Deep Recurrent Neural Networks." *Vessel Plus*, 2023.
5. **Y. Jin**, H. Sun, Y. Ji. "Public Risk Perceptions and Coping Behaviors in Novel Coronavirus Pneumonia Outbreaks: A Systematic Review." *Chinese Journal of Nursing Education*, 2023.
6. Li YQ, Gu JN, Sun YM, Shao J, Dang Y, Guo JM, **Jin YW**, Hu GY, Sun HY. "Evolution of risk perception of medical staff during public health emergencies: a qualitative study." *Modern Clinical Nursing*, 2022.

In Submission

1. **Y. Jin**, Y. Wang, X. Huang, D. A. Wacker, M. A. Puskarich, F. Xie. "Development and Multicenter External Validation of a Data-Driven Scoring System for Early and Rapid Identification of Sepsis in Emergency Departments." *medRxiv*, 2025. doi: 10.1101/2025.09.27.25336784
2. **Y. Jin***, Z. Li*, M. K. Smith, B. R. Schackman, E. L. Crable, C. N. Behrends, K. Wagner, A. Y. Walley, B. D. L. Marshall, X. Zang. "Drug Overdose Deaths among Non-Hispanic Black People Ages 55 or Older Across the United States, 1999–2023."
3. **Y. Jin***, Z. Li*, Q. Wu, B. D. L. Marshall, E. L. Crable, X. Zang. "U.S. Drug Overdose Deaths Involving Stimulants Without Opioids Continued to Increase in 2024."

Patents

1. H. Chen, L. Lyu, L. Li, **Y. Jin**. *Model Training Method, Physiological Indicator Detection Method, Apparatus, and Electronic Device.* CN Patent CN119441860A, 2025. Machine learning–based physiological indicator detection using wearable devices; granted by the China National Intellectual Property Administration.

Presentations

1. **Y. Jin**, Y. Wang, M. Puskarich, F. Xie. "Emergency Sepsis Risk Prediction Score for Early and Rapid Identification in the Emergency Department." *AMIA Annual Symposium*, 2025. **Oral Presentation**.
2. **Y. Jin**, Y. Wang, M. A. Puskarich, F. Xie. "Development and Validation of an Interpretable Data-Driven Score for Early and Rapid Identification of Sepsis at the Emergency Department." *National Academy of Engineering (NAE) Regional Meeting*, 2025. Poster Presentation.
3. **Y. Jin**, Y. Wang, M. A. Puskarich, F. Xie. "Interpretable Sepsis Identification Score for Emergency Care." *Advances in Learning Health System Sciences Conference*, 2025. Poster Presentation.
4. **Y. Jin**, Y. Wang, M. A. Puskarich, F. Xie. "Sepsis Risk Prediction Using a Data-Driven Scoring System." *Surgery Research Recognition Day*, University of Minnesota, 2025. Short Oral Presentation.

Awards and Honors

- Third Prize in National College Student Challenge Cup Competition (2021)
- First Prize in National College Student Innovative Experimental Project (2020)
- Second Prize China Undergraduate Mathematical Contest in Modeling (2019)
- Peking University Social Welfare Scholarship (2019)

Skills

Python, **R**, SQL, LaTeX, STATA, MatLab, Machine Learning, Deep Learning, Signal Processing