CAN WANG

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RESEARCH INTERESTS

- Distribution-free inference; Uncertainty quantification
- AI for Statistics; Medical AI
- Survival analysis; Risk Prediction
- Causal inference

EDUCATION

Johns Hopkins University

Master of Biostatistics | GPA: 4.00/4.00 — Aug 2024 - May 2026 (expected)

Selected Coursework: Probability and Statistical Inference (I–IV); Methods in Biostatistics (I–IV); Real Analysis; Causal Inference; Survival Analysis; Statistical Computing; Data Management.

Thesis: A Two-stage Conformal Predictive Interval for Competing-Risk Survival Data

Passed Departmental Comprehensive Exam, Jun 2025.

Tsinghua University

Bachelor of Industrial Engineering | GPA: 3.53/4.00 — Sep 2020 - Jul 2024

Selected Coursework:

- **Math:** Calculus (A,B); Linear Algebra; Probability; Operations Research I–II (Deterministic & Stochastic).
- **Statistics & Data Science:** Statistics and Data Analytics; Linear Regression; Multivariate Statistics; Experimental Design; Statistical Computing and Software; Machine Learning and Big Data; Modeling and Simulation; Biostatistics; Causal Inference.
- **Computer Science:** Programming (C++, Python); Data Structures and Algorithms; Database Systems.

Thesis: Graph-Based Optimization for Assembly Sequence Planning under Uncertainty

PUBLICATION/PREPRINTS

Wang, C., & Chen, Y. (2025). Evaluating Large Language Models for Evidence-Based Clinical Question Answering (No. arXiv:2509.10843). *arXiv.* https://doi.org/10.48550/arXiv.2509.10843

RESEARCH EXPERIENCE

Two-stage Conformal Predictive Interval for Competing-Risk Survival Data — Aug 2025 – Present

Johns Hopkins University | Advisor: Prof. Mei-Cheng Wang — *Baltimore, MD*

- Developed a two-stage conformal inference framework for competing-risk survival data, constructing conformal support for cause type prediction and conformal intervals for cause-specific time-to-event.
- Introduced a nonparametric joint estimator of event time, covariates, and cause type to generate synthetic calibration samples under censoring, enabling model-free calibration.
- Performed extensive simulation studies across heterogeneous hazard structures, censoring levels, and sensitivity settings.
- Implementing an open-source R package and preparing a first-author manuscript.

AI Agent for Causal Inference — Aug 2025 – Present

Johns Hopkins University | Advisor: Prof. Yiqun Chen — *Baltimore, MD*

- Designed an autonomous causal estimation framework in which large language models generate, execute, and refine estimators with minimal human input.
- Evaluated state-of-the-art LLMs on the ACIC 2022 Track 2 benchmark; zero-shot programs produced canonical estimators and achieved mid-range RMSE–coverage performance relative to human submissions.

- Extended the system to a self-evolving coding agent using a MAP-Elites-style framework, where iterative updates incorporated meaningful refinements including regularization, covariate encoding, pre-mean and trend adjustments, and improved clustered inference.
- Across 100 iterations, the self-evolving agent matched or exceeded human-expert performance, achieving lower RMSE and near-nominal confidence interval coverage. First-authored Preprint available.

AI for Evidence-Based Clinical QA (MEDAL Dataset) Mar 2025 – Sept 2025
Johns Hopkins University | Advisor: Prof. Yiqun Chen *Baltimore, MD*

- Curated a multi-source benchmark (21.6K QA pairs) from Cochrane systematic reviews, AHA structured guidelines, and narrative guidelines to evaluate how LLMs answer clinical questions and reason over evidence quality.
- Analyzed multiple LLMs, showing that performance depends strongly on the structure, clarity and quality of source evidence. Model uncertainty increases when clinical evidence is weak or ambiguous.
- Demonstrated that retrieval-augmented prompting using PubMed abstracts substantially improves factual accuracy (from 60.3% to 79.9%), highlighting the role of external evidence in improving performance.
- Released the MEDAL dataset and evaluation framework as an open-source benchmark (HuggingFace, GitHub); poster accepted at ML4H 2025; with first-authored preprint available.

WORK EXPERIENCE

Bailongma Yunxing Technology Co., Ltd. Jun 2023 – Sep 2023
Data Research and Development Department, Intern *Beijing, China*

- Extracted and cleaned 12.8M+ ride-hailing records using SQL and Python to study multi-homing behavior among drivers across major platforms.
- Conducted exploratory data analysis comparing behavioral and income patterns of multi-homing vs. single-homing drivers, producing visual summaries for internal reporting.
- Built a Random Forest model for feature selection and a Multinomial Logistic Regression model to predict multi-homing choice, achieving 79.5% accuracy.

OTHER EXPERIENCE

- **Teaching:** TA for AS.280.345 Public Health Biostatistics (FA25); led weekly discussion sessions and graded assignments.
- **Presentations:** Poster "Evaluating Large Language Models for Evidence-Based Clinical Question Answering" presented at JHU DSAI Symposium; to be presented at ML4H 2025.
- **Reviewing:** Reviewer for ML4H 2025.

SKILLS

Languages: English (fluent; TOEFL 114); Chinese (native); Portuguese (beginner); Japanese (beginner).
Programming: Python, R, C++, SQL; Familiar with open-source development and reproducible pipelines (GitHub, R package development, Python modules).
Personal Interests: EDM production; multi-instrument performance; science fiction; strategic board games.