

BAI-RUI ZHANG

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Country P. R. CHINA

EDUCATION

- Northeastern University P. R. CHINA
B.E., GPA:3.99/4.0; 4.24/5.0, Computer Science & Technology 09.2021 – 06.2025
IELTS score:6.5 GPA Rank:3/116 (Top 2.6%)
- The Hong Kong University of Science and Technology, Guangzhou P. R. CHINA
MPhil, Information Hub 08.2025 – Present

SELECTED AWARDS AND HONORS

- International-Level Meritorious Winer (Top 8%), Mathematical Contest in Modeling (MCM/ICM) 02/2024
- International-Level 1st Prize (Top 5%), Asia and Pacific Mathematical Contest in Modeling 11/2023
- University-Level Distinguished Undergraduate 04/2025
- University-Level Merit Student and University Scholarship (Four Consecutive Years) 2021 – 2024

SKILLS, TECHNIQUES & INTERESTS

Professional Skills

- Python, C++, Matlab, SQL, HTML; Linux (Ubuntu), Docker, Kubernetes, Visualization
- Deep Learning (CNN, LSTM, Transformer); Machine Learning (SVM, XGBoost, Random Forest)
- Large Language Model Testing, Tuning, Deployment and Data Processing

Research Interests

- Multimodal LLMs (Reasoning, Domain Adaptation), Embodied intelligence (Vision-Language-Action Model)

RESEARCH EXPERIENCE

Project: AI in Pancreatic Image Analysis: A Review

Position: Undergraduate Researcher

03.2023 – 05.2024

Advisor: Prof. Yong Liu, Zhejiang University

Description:

- Summarized advancements in AI algorithms for pancreatic cancer imaging (CT, MRI, EUS)
- Contributed to a 22,000-word review on algorithms for image classification, segmentation, and prognosis
- Accepted by Sensors (SCI, JCR Q2, 2nd Author)

Project: Sepsis Mortality and Medication Prediction Modeling

Position: Summer Research Camp Participant

07.2023 – 04.2024

Advisor: Prof. Manolis Kellis, Massachusetts Institute of Technology

Description:

- Developed a personalized medication prediction model for sepsis, utilizing machine learning techniques like SVM, Random Forest, and XGBoost.
- Identified critical vital signs and medications influence sepsis mortality, with model accuracy reaching 73%.
- Achieved an "A" grade (98/100) for the project evaluated by Prof. Kellis, ranking 1st in the team.

Project: Are LLMs Ethically Ready for Healthcare? A Critical Study Using Checklist

Position: Research Assistant

07.2024 – 02.2025

Advisor: Prof. Benyou Wang, The Chinese University of Hong Kong, Shenzhen

Description:

- Identified four key attributes for an ethical LLM and developed testing methodologies using checklist.
- Using data from educational resources, human-annotated, and synthetic data to conduct comprehensive testing.

- Only 20% of the LLMs we tested barely meet the minimum requirement for ethical AI in healthcare.
- Submitted an essay (1st Author) to ARR February.

NON-ACADEMIC EXPERIENCE

Northeastern University, China

- Publicity Coordinator of 2104 Computer Science & Technology Class 09.2021 – 09.2023
- Subject Assistant in Engineering Economics & Software Architecture 09.2023 – 12.2023

PUBLICATIONS (BY DATE)

Zhang, B., Liu, X., Xiao, Q., Feng, X., Hu, Y., Wang, B. (2025, February) Are LLMs Ethically Ready for Healthcare? A Critical Study Using Checklist. *ARR* (Under Review). [Link](#)

Liu, X., Xiao, Q., Hu, Y., Chen J., Feng, X. **Zhang, B.**, Xiang, W., Chang J., Yu, G., Wang, B. (2025, February) Large Language Models for Outpatient Referral: Problem Definition, Benchmarking and Challenges. *Arxiv*. DOI. [2503.08292](#)

Liu, W., **Zhang, B.**, Liu, T., Jiang, J., & Liu, Y. (2024, July). Artificial Intelligence in Pancreatic Image Analysis: A Review. *Sensors*, 24(14), 4749. SCI JCR Q2. DOI. [10.3390/s24144749](#)

Zhang, B., Cai, Q., Ding, J., & Yuan, K. (2023, October). Factors that increase the mortality of sepsis and personalized medication for patients with sepsis. In *Proceedings of the 2023 4th International Symposium on Artificial Intelligence for Medicine Science* (pp. 1261-1271). EI. DOI. [10.1145/3644116.3644330](#)

PATENTS

Zhang, B., et al. Multifunctional Desktop Expander [Patent]. CN202322388965.X. April 2024.

Zhang, B., et al. Desktop Expander (Multifunctional and Foldable) [Patent]. CN202330570881.0. March 2024.

Liu, W., **Zhang, B.**, et al. An Image Acquisition and Diagnostic Aid Device [Patent]. CN202321362505.3. February 2024.