

Chengsen Wang



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EDUCATION

Beijing University of Posts and Telecommunications	Ph.D. 2023.09 - Present
• Major: Computer Science and Technology, GPA: 89.86/100, Research Focus: Time Series Analysis	
Beijing University of Posts and Telecommunications	M.S. 2022.09 - 2023.06
• Major: Computer Science and Technology, GPA: 92.71/100, Research Focus: Time Series Analysis	
Beijing University of Posts and Telecommunications	B.S. 2018.09 - 2022.06
• Major: Automation, GPA: 90.66/100, Rank : 1/78	

RESEARCH EXPERIENCE

Anomaly Detection for Long-period Non-stationary Multivariate Time Series	2022.10 - 2023.01
• Overview: Existing methods focus on stationary data, neglecting drift in non-stationary environments. We proposed the D3R algorithm to dynamically decompose long-period non-stationary series and achieve accurate detection using timestamps to overcome local window limitations. The method reduces computational costs by diffusion reconstruction to mitigate information bottlenecks.	
• Outcome: NeurIPS 2023 (CCF A) , First author, <i>Drift doesn't Matter: Dynamic Decomposition with Diffusion Reconstruction for Unstable Multivariate Time Series Anomaly Detection</i>	
Multivariate Time Series Forecasting Using Global and Local Information Fusion	2023.10 - 2024.01
• Overview: Current forecasting methods overly rely on local observations, ignoring the power of timestamps. Lacking a global view in the presence of noisy data weakens predictive performance. We developed the GLAFF framework, which can integrate into any forecasting backbone and model timestamps independently to capture global dependencies and boost performance.	
• Outcome: NeurIPS 2024 (CCF A) , First author, <i>Rethinking the Power of Timestamps for Robust Time Series Forecasting: A Global-Local Fusion Perspective</i>	
Multimodal Time Series Analysis Based on Large Language Models	2024.03 - 2024.10
• Overview: Traditional forecasting algorithms struggle with complex real-world scenarios due to reliance on numerical data. This study treats time series as a "foreign language," enabling LLMs to process time series and text simultaneously. We contribute four multimodal datasets and demonstrate the exceptional performance of ChatTime across various multimodal tasks. This advancement not only broadens the application scope of time series analysis but also provides valuable resources and directions for future research.	
• Outcome: AAAI 2025 (CCF A) , First author, <i>ChatTime: A Unified Multimodal Time Series Foundation Model Bridging Numerical and Textual Data</i>	
Irregular Multivariate Time Series Forecasting Using Adaptive Linear Networks	2024.07 - 2024.10
• Overview: Traditional linear networks perform well with regular time series but struggle with irregular sequences due to inconsistent sampling intervals and missing data. We introduced the AiT model, which utilizes ALinear to adaptively adjust weights according to varying observation times, improving both predictive accuracy and computational efficiency.	
• Outcome: ICDE 2025 (CCF A) , First author, <i>Under Review</i>	

PROJECT EXPERIENCE

Anomaly Detection for Home Broadband Services and Network Quality	2021.07 - 2023.11
• Overview: Led the modeling and anomaly detection of real data from China Mobile's TV and network services. Addressed challenges such as periodicity in TV metrics, missing data, noise interference, and large-scale data processing under limited computational resources. Involved in the entire lifecycle of data preprocessing to model deployment in production, enhancing technical and project management skills.	
• Outcome: MSN 2022 , Other author, <i>MSJAD: Multi-Source Joint Anomaly Detection of Web Application Access</i> ICCC 2022 , Other author, <i>Informer-based Anomaly Detection for Internet TV Service in Home Network</i>	

AWARDS AND HONORS

• Beijing Outstanding Graduate	
• Provincial First Prize in "Challenge Cup"	
• National Innovation and Entrepreneurship Project Leader	
• National Undergraduate Mathematics Competition (2nd prize)	
• Beijing Mechanical Innovation Design Competition (2nd prize)	
• Multiple enterprise and university scholarships, and recognized as an Outstanding Graduate Student	