Stanford

Chenxi Sun

Postdoctoral Scholar, Neurology and Neurological Sciences

Bio

LINKS

- Google Scholar: https://scholar.google.com/citations?user=KP8o1-4AAAAJ&hl=en&oi=ao

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Artificial intelligence for time-series data; clinical EEG foundation models; machine learning for neurophysiology

Publications

PUBLICATIONS

- **A Review of Deep Learning Methods for Irregularly Sampled Medical Time Series Data** *Health Data Science*
  Sun, C., et al
  2026: 0456
- **An Electrocardiogram Foundation Model Built on over 10 Million Recordings.** *NEJM AI*
  Li, J., Aguirre, A. D., Moura, V., Jin, J., Liu, C., Zhong, L., Sun, C., Clifford, G., Westover, M. B., Hong, S.
  2025; 2 (7)
- **Harvard Electroencephalography Database: A comprehensive clinical electroencephalographic resource from four Boston hospitals.** *Epilepsia*
  Sun, C., Jing, J., Turley, N., Alcott, C., Kang, W. Y., Cole, A. J., Goldenholz, D. M., Lam, A., Amorim, E., Chu, C., Cash, S., Junior, V. M., Gupta, et al
  2025
- **Expert-Level Detection of Epilepsy Markers in EEG on Short and Long Timescales** *The New England Journal of Medicine AI*
  Li, J., Goldenholz, D. M., Alkofer, M., Sun, C., et al
  2025
- **A Ranking-Based Cross-Entropy Loss for Early Classification of Time Series.** *IEEE transactions on neural networks and learning systems*
  Sun, C., Li, H., Song, M., Hong, S.
  2024; 35 (8): 11194-11203
- **TEST: Text prototype aligned embedding to activate LLM's ability for time series** *The Twelfth International Conference on Learning Representations (ICLR 2024)*
  Sun, C., et al
  2024: 28
- **Curriculum Design Helps Spiking Neural Networks to Classify Time Series** *arXiv*
  Sun, C., et al
  2024

- **Review of Data-centric Time Series Analysis from Sample, Feature, and Period** *arXiv*
  Sun, C., et al
  2024

- **Time pattern reconstruction for classification of irregularly sampled time series** *PATTERN RECOGNITION*
  Sun, C., Li, H., Song, M., Cai, D., Zhang, B., Hong, S.
  2024; 147

- **A multi-model architecture based on deep learning for aircraft load prediction** *COMMUNICATIONS ENGINEERING*
  Sun, C., Li, H., Dui, H., Hong, S., Sun, Y., Song, M., Cai, D., Zhang, B., Wang, Q., Wang, Y., Liu, B.
  2023; 2 (1)

- **Estimating causal effects of physical disability and number of comorbid chronic diseases on risk of depressive symptoms in an elderly Chinese population: a machine learning analysis of cross-sectional baseline data from the China longitudinal ageing social survey.** *BMJ open*
  Wang, Z., Yang, H., Sun, C., Hong, S.
  2023; 13 (7): e069298

- **SPL-LDP: a label distribution propagation method for semi-supervised partial label learning** *APPLIED INTELLIGENCE*
  Song, M., Sun, C., Cai, D., Hong, S., Li, H.
  2023; 53 (18): 20785-20796

- **Adaptive model training strategy for continuous classification of time series.** *Applied intelligence (Dordrecht, Netherlands)*
  Sun, C., Li, H., Song, M., Cai, D., Zhang, B., Hong, S.
  2023: 1-19

- **Continuous diagnosis and prognosis by controlling the update process of deep neural networks.** *Patterns (New York, N.Y.)*
  Sun, C., Li, H., Song, M., Cai, D., Zhang, B., Hong, S.
  2023; 4 (2): 100687

- **Curricular and Cyclical Loss for Time Series Learning Strategy** *arXiv*
  Sun, C., et al
  2023

- **A systematic review of deep learning methods for modeling electrocardiograms during sleep.** *Physiological measurement*
  Sun, C., Hong, S., Wang, J., Dong, X., Han, F., Li, H.
  2022; 43 (8)

- **DLSA: Semi-supervised partial label learning via dependence-maximized label set assignment** *INFORMATION SCIENCES*
  Song, M., Li, H., Sun, C., Cai, D., Hong, S.
  2022; 609: 1169-1180

- **A Systematic Review of Echo State Networks From Design to Application** *IEEE Transactions on Artificial Intelligence*
  Sun, C., et al
  2022

- **Hypergraph Structure Learning for Hypergraph Neural Networks**
  Cai, D., Song, M., Sun, C., Zhang, B., Hong, S., Li, H.
  edited by DeRaedt, L.
  IJCAI-INT JOINT CONF ARTIF INTELL.2022: 1923-1929

- **GRP-FED: Addressing Client Imbalance in Federated Learning via Global-Regularized Personalization**
  Chou, Y., Hong, S., Sun, C., Cai, D., Song, M., Li, H.
  edited by Banerjee, A., Zhou, Z. H., Papalexakis, E. E., Riondato, M.
  SIAM.2022: 451-458

- **Hypergraph Contrastive Learning for Electronic Health Records**
  Cai, D., Sun, C., Song, M., Zhang, B., Hong, S., Li, H.
  edited by Banerjee, A., Zhou, Z. H., Papalexakis, E. E., Riondato, M.
  SIAM.2022: 127-135

- **Deep Ordinal Neural Network for Length of Stay Estimation in the Intensive Care Units**
  Cai, D., Song, M., Sun, C., Zhang, B., Hong, S., Li, H., ACM
  ASSOC COMPUTING MACHINERY.2022: 3843-3847
- **Confidence-Guided Learning Process for Continuous Classification of Time Series**
  Sun, C., Song, M., Cai, D., Zhang, B., Hong, S., Li, H., ACM
  ASSOC COMPUTING MACHINERY.2022: 4525-4529
- **GRP-FED: Addressing Client Imbalance in Federated Learning via Global-Regularized Personalization** *Proceedings of the 2022 SIAM International Conference on Data Mining (SDM 2022)*
  Chou, Y., Hong, S., Sun, C.
  2022
- **Hypergraph Contrastive Learning for Electronic Health Records** *Proceedings of the 2022 SIAM International Conference on Data Mining (SDM 2022)*
  Cai, D., Sun, C., et al
  2022
- **Hypergraph Structure Learning for Hypergraph Neural Networks** *Proceedings of the Thirty-First International Joint Conference on Artificial Intelligence (IJCAI 2022)*
  Cai, D., Song, M., Sun, C.
  2022
- **Classifying vaguely labeled data based on evidential fusion** *INFORMATION SCIENCES*
  Song, M., Sun, C., Cai, D., Hong, S., Li, H.
  2022; 583: 159-173
- **Interpretable time-aware and co-occurrence-aware network for medical prediction.** *BMC medical informatics and decision making*
  Sun, C., Dui, H., Li, H.
  2021; 21 (1): 305
- **Personalized vital signs control based on continuous action-space reinforcement learning with supervised experience** *BIOMEDICAL SIGNAL PROCESSING AND CONTROL*
  Sun, C., Hong, S., Song, M., Shang, J., Li, H.
  2021; 69
- **Predicting COVID-19 disease progression and patient outcomes based on temporal deep learning.** *BMC medical informatics and decision making*
  Sun, C., Hong, S., Song, M., Li, H., Wang, Z.
  2021; 21 (1): 45
- **Practical Lessons on 12-Lead ECG Classification: Meta-Analysis of Methods From PhysioNet/Computing in Cardiology Challenge 2020.** *Frontiers in physiology*
  Hong, S., Zhang, W., Sun, C., Zhou, Y., Li, H.
  2021; 12: 811661
- **TE-ESN: Time Encoding Echo State Network for Prediction Based on Irregularly Sampled Time Series Data** *Proceedings of the Thirtieth International Joint Conference on Artificial Intelligence (IJCAI 2021)*
  Sun, C., et al
  2021
- **TE-ESN: Time Encoding Echo State Network for Prediction Based on Irregularly Sampled Time Series Data**
  Sun, C., Hong, S., Song, M., Chou, Y., Sun, Y., Cai, D., Li, H.
  edited by Zhou, Z. H.
  IJCAI-INT JOINT CONF ARTIF INTELL.2021: 3010-3016