Yangyang Li

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RESEARCH INTEREST

My research interests focuses on deep learning and representation learning models, combining Graph Neural Networks (GNN) and Self-Supervised Learning for visual and temporal data understanding.

EDUCATION

- Faculty of Engineering and Technology, Panyapiwat Institute of Management, Thailand
Aug 2023 - Feb 2026 (**Full Scholarship**)
- Faculty of Computer Science and Technology, Nanjing Tech University Pujiang Institute, China
Sep 2021 - Jun 2023

RESEARCH EXPERIENCE

Graph-aware Time–Frequency Contrastive Learning Framework (contrastive-twfreq)   Aug 2025 - present
- An innovative time-frequency contrastive learning mechanism is proposed: combining frequency-sliced dynamic adjacency with time-weighted InfoNCE loss to achieve structure-aware temporal representation learning.
- Graph structure fusion of time-frequency features: Graph neural networks (GNNs) are used to capture intervariate dependencies and to model multi-scale time-series features in the frequency domain.
- Complete and reproducible framework: Includes self-supervised training, linear probes, ablation experiments, and visualization modules, which can be run directly on datasets such as METR-LA and PEMS-BAY.

A Novel ARM-DC AutoConNet for Accurate Long-Term Time-Series Forecasting
Sep 2024 - Aug 2025
- Propose the ARM-DC AutoConNet architecture: Adaptive Rescaling Mechanism (ARM) and Multi-scale Dilated Convolution (DC).
- By introducing Layer Normalization and Residual Connections, the network can maintain stable convergence in long sequence prediction.
- Design of multi-index composite loss function.
- Significant performance improvement and lightweight design coexist.
- Evaluations were conducted on 16 publicly available datasets (such as M4, M5, ETTh1, ETTm1, Traffic, etc.), showing a maximum MSE reduction of up to 95% and a MAE reduction of approximately 77%.

Using YOLOv3 for Vehicle Tracking in DonkeyCar   Sep 2023 - Jul 2025
- A dual-vehicle cooperative autonomous driving method based on the fusion of YOLOv3 visual detection and control algorithms is proposed, which realizes the tracking of the vehicle in front and obstacle avoidance in the DonkeyCar simulation environment.
- The reliability of multi-vehicle collaboration relying solely on cameras was demonstrated, maintaining stable tracking even in the event of sensor failure or obstruction, thus verifying the detection and control performance of YOLOv3 in dynamic multi-vehicle scenarios.

WORK EXPERIENCE

university teacher   Oct 2025 - present
- The main focus is on teaching students computer fundamentals and professional knowledge such as web front-end development and Windows services.

E-**commerce**   Mar 2023 - Jul 2023
- Primarily responsible for the operation of e-commerce stores.