

Weilin RUAN

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🏠 RWLinno

Education

Hong Kong University of Science and Technology (Guangzhou) <i>Master of Philosophy, Data Science and Analysis of the Information Hub</i>	Sep 2024-Jun 2026 <i>Guangzhou</i>
Jinan University (Project 211) <i>Bachelor, Network Engineering</i> outstanding graduate of the Computer Science and Technology / Cyberspace Security Department GPA: 3.7(5.0) or 87(100)	Sep 2020-Jun 2024 <i>Guangzhou</i>

Competition Experience

2020-2022: 3 Bronze Medals: The ICPC International Collegiate Programming Contest (**ACM-ICPC**) 45-47th
Spring 2022: 1 Silver Medal & 2 Bronze Medals: China Collegiate Programming Contest (**ACM-CCPC**)
Spring 2023: Honorable Mentions: The Mathematical/Interdisciplinary Contest in Modeling (**MCM/ICM Top 25%**)
2021-2023: 2 National Second Prize & 2 Provincial First Prize: Professional Software Engineering LanQiao Cup Final Contest
2021-2023: 1 Solo Champion & 2 Second Prize: Jinan University ACM Programming Contest
2022: 1 Gold Medal & 1 Silver Medal: National University Student Algorithm Design and Programming Challenge(**Top 5%**)
2024: Third Prize: Huawei Software Elite Challenge (**Top 64**)
2023: Third Prize: International English Vocabulary Challenge for College Students (IEVCCS)

Academic Awards

Fall 2024: Outstanding Graduate(**TOP 1%**)
Fall 2023: Golden Arowana Scholarship(**TOP 1%**)
Fall 2023: Excellent Student Cadre Title of Jinan University.(**TOP 5%**)
Fall 2022: Excellent Student Cadre Title of Jinan University.(**TOP 5%**)
Fall 2022: Outstanding students of Jinan University **First-class** scholarship.(**Top 10%**)
Fall 2021: Outstanding students of Jinan University **Second-class** scholarship.(**Top 20%**)

Research Experience

For the latest updates, see Github and Google Scholar. ^_^

ARIMA-LSTM-XGBoost Combined Forecasting Model of Wheat Price **Winter 2020-Spring 2023**
Jinan University

- **Province-level project finished:** College Students' Innovative Entrepreneurial Training Plan Program
- Build a multivariate forecast combination model based on the core's three models of ARIMA, LSTM, and XGBoost.

ViT Model-based Medical Image Assisted Diagnostic System **Spring 2023-Spring 2024**
Jinan University

- **University-level third prize:** "Challenge Cup" National College Student Business Plan Competition
- Contribution: Project manager (first author)
- Apply the Vision-Transformer(ViT) model to the medical field to process different types of medical images.

Intelligent complementary diagnosis of degenerative OA following TCM thinking **Spring 2023-Fall 2024**
Jinan University

- School-level project: Leader
- The pulse diagnosis and tongue color of Chinese medicine can better reflect the characteristics of some bone and joint diseases, which has great analytical value and potential for exploration.

Interpretable Multimodal Sentiment Analysis Models for SMARTHOME **Fall 2023**
Hong Kong University of Science and Technology(GZ)

- Participated in the RBCC offline held in HKUST(GZ) and achieved outstanding camper.
- Feature extraction, feature fusion to train a multimodal sentiment analysis model for processing and predicting sensing data provided by smart home devices and providing proactive care.

Low-rank Adaptation and Unified Model for Spatio-temporal forecasting **Fall 2023-Fall 2024**
Hong Kong University of Science and Technology(GZ)

- Currently contributing as the first author to the papers of a conference and a journal, and these paper are under review.

Internship Experience

Hong Kong University of Science and Technology(GZ)

Fall 2023 - Fall 2024

Research intern in the CityMind group led by Prof. Yuxuan Liang

research includes the fields of ST data prediction and time series prediction; reproducing ST graphical models in traffic flow/urban scenarios, innovating a kind of accessory module based on the existing models and traffic flow datasets, and confirming that the performance of each model has been improved to a certain extent through experiments, and translating the result into a conference article.

Sun Yat-Sen University

Spring 2023

Research intern in GEAR (Graph IEARmning) group led by Prof. Liang Chen

mainly researched the related literature in the direction of GL/DL; studied the long-tail effect and OOD problem of graph-structured data; reproduced the related GNN model and tried to improve the model structure and graph sampling method; tried to improve the existing method by adopting the ideas of subgraph encoding pre-training and tree-graph transformation for the graph sampling problem.

Guangzhou Sesame Coding Education Technology Co., Ltd.

Fall 2021

Algorithm Learning Engineer

The study and innovation of algorithms for programming competitions and the provision of educational resources and services such as course tutorials and OJ testing platforms.

Publications

- Vision-Enhanced Time Series Forecasting via Latent Diffusion Models** 1st author
[TS, MM] Integrates vision capabilities with diffusion models for enhanced time series forecasting.
- Time-VLM: Exploring Multimodal Vision-Language Models for Augmented Time Series Forecasting** 2nd author
[TS, MM, LLM] Leverages Vision-Language Models to improve time series forecasting with multimodal information.
- Fine-grained Urban Heat Island Effect Forecasting** 2nd author
[ST, GL] Context-aware framework for high-resolution urban heat island prediction.
- A Game-Theoretic Spatio-Temporal RL Framework for Public Resource Allocation** 6th author
[ST, RL] Game-theory and RL integration for optimal public resource allocation across space and time.
- Kinematics-based Object Articulation with Gaussian Splatting** 2nd author
[3D, CV] Combines kinematics with Gaussian Splatting for improved articulated object modeling.
- Low-rank Adaptation for Spatio-Temporal Forecasting** 1st author
[ST, TF] Efficient low-rank adaptation techniques for spatio-temporal forecasting models.
- Cross Space and Time: A Spatio-Temporal Unitized Model for Traffic Flow** 1st author
[ST, TF] Unified approach capturing spatial-temporal interactions for traffic prediction.

Campus Experience

Class President

2020-2024

The 20th Network Engineering Class Committee of Jinan University

- As a class representative, I not only have to prioritize notifications to class members while taking care of academics and competitions, but I also have to deal with matters such as general assessment/academic affairs/green card evaluation/scholarships/faculty meetings/activities, etc. I have also gained trusting relationships with my fellow students. This responsibility has also helped me to gain a trusting relationship with my classmates and to develop my communication and coordination skills.

Minister of Propaganda Department

2020-2022

Jinan University student dormitory building association

- I served as an officer and vice minister of the school organization for one year, which helped me to improve my coordination and scheduling of department members and communication skills with internal and external organizations, as well as learning a lot about photography, tweeting, design software such as PS/PR, and publicity of works.

Club Membership

2020-2024

Jinan University Computer Geek Association

- Learning the technology of using Unity to create games, currently updating 2 projects; and has released 4 RPG indie games, accumulating certain project management and experience in using game development engine; in the world's largest comprehensive digital distribution platform Steam on behalf of the work "Orphan of the Petal", and has achieved most of the positive results.

Club Membership

2020-2023

The ACM Programming Team of Jinan University

- He spent a lot of time studying ACM programming from the ground up in college, from passing the varsity team selection to winning the ACM Programming Contest, taking care of his coursework while promoting his studies with the contest. He was awarded 1762 points (**max. 1961**) in **Codeforces**, the world's largest algorithmic communication platform. And I was also the first freshman to win a bronze medal in the history of the varsity team and an AK in the varsity competition.