TINGYU MO

+(86) 13687759380 ◇ Beijing, China
motingyu@buaa.edu.cn ◇ motingyu.com

EDUCATION

M.Eng. in Electronic and Information Engineering — Expected Jan. 2024
Beihang University — *Beijing, China*
Advisor: Prof. Lei Ren
Published papers at TII

B.Eng. in Intelligence Science and Technology — Sept. 2017 - Jun. 2021
University of Science and Technology Bejing — *Beijing, China*
Thesis: Deep Adversarial Transfer Learning under Weak Supervision
Advisor: Prof. Yanling Zhang
GPA: 3.7/4.0

PUBLICATIONS

[1] Meta-Learning Based Domain Generalization Framework for Fault Diagnosis with Gradient Aligning and Semantic Matching.
Lei Ren*, **Tingyu Mo***, Xuejun Cheng
*IEEE Transactions on Industrial Informatics (**TII**), 2023. (IF: 11.648), Accepted.*

[2] Temporal-Frequency Attention Focusing for Time Series Extrinsic Regression via Auxiliary Task.
Lei Ren*, **Tingyu Mo***, Xuejun Cheng
*IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**), 2023. (IF: 14.225), Minor Revision.*

[3] A Wavelet-Enhanced Curriculum Domain Adaptation Model for Time-Series Sensor Data.
Lei Ren, Xuejun Cheng, **Tingyu Mo**
*IEEE Transactions on Industrial Informatics (**TII**), 2023. Under Review.*

[4] LMRformer: Lightweight Multi-hierarchy Time Series Reduction Transformer for Efficient Remaining Useful Life Prediction.
Lei Ren, Haiteng Wang, **Tingyu Mo**
*IEEE Transactions on Industrial Informatics (**TII**), 2023. Under Review.*

[5] A Survey of Evolutionary Game and Resource Allocation.
Yanling Zhang, **Tingyu Mo**, Songtao Li, Yan Zhang, Qing Li
Chinese Journal of Engineering, 2022, 44(3): 402-410.

RESEARCH & INTERNSHIPS

Research Experience in Transfer Learning — Nov. 2021 - Mar. 2023
Instructor: Prof. Lei Ren — *Beihang University*

- Mainly focus on **Domain Generalization** and **Domain Adaptation**.
- Proposed a heterogeneous domain generalization method Meta-GENE[1] to learn domain-invariant prediction strategy via aligning optimization directions and matching latent semantic information of multiple domains.
- Introduced a progressive knowledge transfer strategy[3] based on curriculum learning in the adversarial training framework to realize unsupervised domain adaptation.

Research Experience in Time Series Prediction Feb. 2022 - Sept. 2022
Instructor: Prof. Lei Ren *Beihang University*

- Mainly focus on **Time Series Forecasting** and **Extrinsic Regression**.
- Designed an information reconstruction-based auxiliary task [2] to dynamically redirect the attention of extrinsic regression model towards the most essential information in the temporal-frequency domain.
- Proposed a lightweight transformer incorporated a time series reduction strategy [4] that adaptively select task-relevant time steps and eliminate redundant time steps based on importance scores to reduce computation cost in long-term time series prediction.

Research Experience in Multi-Agent Game Theory Nov. 2019 - May. 2020
Instructor: Prof. Yanling Zhang *University of Science and Technology Beijing*

- Mainly focus on **Evolutionary Game Theory**, **Multi-Agent Ultimate Game** under Complex Network [5].
- Studied the factors affecting the emergence of fairness in a variety of complex networks within the framework of evolutionary game theory and under the setting of ultimatum game.
- Carried on numerical simulation, experimental data recording and visualization analysis of the evolutionary process.

AWARDS AND HONORS

- Academic Scholarship, Beihang University 2022
- Outstanding Graduate, University of Science and Technology Beijing 2021
- Third Prize in the "Huawei Cup" Graduate Mathematical Modeling Competition 2021
- Second Prize in Undergraduate Research Training Program, National Level Project 2020
- First Prize in iCAN International Innovation and Entrepreneurship Competition, Beijing Division 2019
- Third prize in the "dream +" innovation and entrepreneurship competition 2019
- Merit Student, University of Science and Technology Beijing 2017 - 2020
- Excellent Individual in Social Practice, University of Science and Technology Beijing 2018

SKILLS

Programming Languages: Python, C, Shell
Language Skills: CET-4 (575), CET6 (515), Cantonese
Tools for ML/DL: PyTorch, Tensorflow, wandb, tsai
Others and Soft Skills: LaTex, Markdown, Linux