YONG LIU

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Google Scholar ◇ **GitHub** ◇ **ORCID**

EDUCATION

Ph.D. in Software Engineering *Aug. 2021 – Present*
School of Software, Tsinghua University Beijing, China
Advisor: Prof. Mingsheng Long

Bachelor in Software Engineering, Tsinghua University *Aug. 2017 – July 2021*
School of Software, Tsinghua University Beijing, China
GPA: 3.63/4.0 Rank: 2/84

Bachelor in Economics, Tsinghua University (*Second Degree*) *Aug. 2018 – July 2021*
School of Economics and Management, Tsinghua University Beijing, China

RESEARCH INTERESTS

My research interests cover **Time Series Analysis** and **Deep Learning**. I am currently working on foundation time series models, large time series models, and multi-modal time series models. In addition to pure research, I also dedicate myself to promoting research on valuable real-world applications. My research aims to contribute to the advancement of intelligent systems capable of handling massive and complicated temporal data across domains, including finance, healthcare, industry, and environment.

PUBLICATIONS AND PREPRINTS

AutoTimes: Autoregressive Time Series Forecasters via Large Language Models **NeurIPS 2024**
Yong Liu*, Guo Qin*, Xiangdong Huang, Jianmin Wang, Mingsheng Long#

Timer: Generative Pre-trained Transformers Are Large Time Series Models **ICML 2024**
Yong Liu*, Haoran Zhang*, Chenyu Li*, Xiangdong Huang, Jianmin Wang, Mingsheng Long#

iTransformer: Inverted Transformers Are Effective for Time Series Forecasting **ICLR 2024**
Yong Liu*, Tengge Hu*, Haoran Zhang*, Haixu Wu, Shiyu Wang, Lintao Ma, Mingsheng Long#
– *Deployed in Ant Group and Huawei Cloud* (**Github Stars 1.2k+, ICLR Spotlight, Cite 340+**)

Koopa: Learning Non-stationary Time Series Dynamics with Koopman Predictors **NeurIPS 2023**
Yong Liu*, Chenyu Li*, Jianmin Wang, Mingsheng Long#

Non-stationary Transformers: Exploring the Stationarity in Time Series Forecasting **NeurIPS 2022**
Yong Liu*, Haiwu Wu*, Jianmin Wang, Mingsheng Long# (**Github Stars 450+, Cite 400+**)

TimesNet: Temporal 2D-Variation Modeling for General Time Series Analysis **ICLR 2023**
Haiwu Wu*, Tengge Hu*, **Yong Liu***, Hang Zhou, Jianmin Wang, Mingsheng Long# (**Cite 600+**)

TimeXer: Empowering Transformers for Time Series Forecasting with Exogenous Variables
Yuxuan Wang*, Haixu Wu*, Jiaxiang Dong, Guo Qin, Haoran Zhang, **Yong Liu**, Yunzhong Qiu, Jianmin Wang, Mingsheng Long# **NeurIPS 2024**

Ranking and Tuning Pre-trained Models: A New Paradigm for Exploiting Model Hubs **JMLR 2022**
Kaichao You*, **Yong Liu***, Ziyang Zhang, Jianmin Wang, Michael I. Jordan, Mingsheng Long#

LogME: Practical Assessment of Pre-trained Models for Transfer Learning **ICML 2021**
Kaichao You*, **Yong Liu***, Jianmin Wang, Mingsheng Long# (**Cite 180+**)

Deep Time Series Models: A Comprehensive Survey and Benchmark arXiv Preprint 2024
Yuxuan Wang*, Haixu Wu*, Jiaxiang Dong, **Yong Liu**, Mingsheng Long, Jianmin Wang#

* Equal Contribution, # Corresponding Author

APPLICATIONS AND PROJECTS

Algorithm Development and Package

- *Time-Series-Library*: Deep Models for Time Series Analysis (**GitHub Stars 6k+**) *Co-Author*
- *Transfer-Learning-Library*: Algorithms for Tranfer Learning (**GitHub Stars 3k+**) *Committer*

Open-Source Models for Time Series

- *iTransformer*: Foundation Multivariate Time Series Model (**GitHub Stars 1.2k+**) *Maintainer*
- *Timer*: GPT-style Large Time Series Model for General Time Series Analysis *Maintainer*
- *Non-stationary Transformers*: Transformers for Non-stationary Forecasting *Maintainer*
- *Koopa*: Theory-Inspired Efficient Forecaster for Non-stationary Time Series *Maintainer*

Systems and Applications

- *Apache IoTDB - AINode*: **Native AI Analysis in Time Series Database** *Project Leader*
- *iTransformer*: Green Computing of Ant Group (**Tons of Carbon Dioxide Saved**) *First Author*

INVITED TALKS

- **Exploring Large Models for Time Series** at IoA, CAS. [**Slides**] *June 20, 2024*
- **Deep Learning for Time Series Applications** at DoA, THU. [**Slides**] *May 25, 2024*
- **Large Models for Native Database Analysis** at TPCTC 2024. [**PDF**] *Aug 30, 2024*

SERVICES AND EXPERIENCES

Reviewer & PC Member

- International Conference on Learning Representations (ICLR) *2024*
- International Conference on Machine Learning (ICML) *2022-2024*
- International Conference on Very Large Databases (VLDB) *2023*
- Conference on Neural Information Processing Systems (NeurIPS) *2023-2024*

Teaching Experiences

- TA, Database System of Prof. Jianmin Wang *Spring 2024*
- TA, Machine Learning of Prof. Mingsheng Long *Fall 2021-2023*
- TA, Deep Learning of Prof. Mingsheng Long *Fall 2021-2022*
- TA, Introduction to Artificial Intelligence of Prof. Mingsheng Long *Spring 2021-2022*

SELECTED AWARDS

- Outstanding Papers of Beijing [**Certificate**] *2021*
- Outstanding Graduates of Beijing [**Certificate**] *2021*
- Excellent Graduates of Tsinghua [**Certificate**] *2021*
- Future Scholar Scholarship, Tsinghua University *2021*
- Boeing Scholarship, Tsinghua University *2020*
- Tang Lixin Scholarship, Tsinghua University *2020*
- Jiang Nanxiang Scholarship, Tsinghua University *2019*
- Huawei Scholarship, Tsinghua University *2018*