

QINGYI PAN

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Education

Tsinghua University, GPA 3.52/4.00

Sep. 2019 – Jul. 2022

Master of Computer Science in Machine Learning, Department of CS, advised by Prof. Jun Zhu

Beijing, China

Qinghai University, GPA 3.85/4.00, Rank 1/112, Highest Honor

Sep. 2014 – Jul. 2018

Bachelor of Engineering, Department of CS, advised by Prof. Xiaoying Wang

Xining, Qinghai, China

Publications and Patents

Publications | Research articles published/submitted

Jun. 2017 - Present

- **Q. Pan**, W. Hu and N. Chen. Two Birds with One Stone: Series Saliency for Accurate and Interpretable Multivariate Time Series Forecasting, *International Joint Conference on Artificial Intelligence, IJCAI*, 2021
- **Q. Pan** and X. Wang. Independent Travel Recommendation Algorithm based on Analytical Hierarchy Process and Simulated Annealing for Professional Tourist. *Appl. Intel.* 2018. (IF = 5.086)
- **Q. Pan** and X. Wang. Performance Evaluation and Optimization of HPCG benchmark on CPU+MIC platform. *International Journal of Hybrid Information Technology, IJHIT*, 2017.
- Y. Li, X. Wang, P. Luo and **Q. Pan**. Thermal-aware hybrid workload management in a green datacenter towards renewable energy utilization. *Energies*, 2019. (IF = 3.085)

Manuscripts | Research articles in preparation

Nov. 2021 - Present

- **Q. Pan**, S. Cheng, Z. Wang, J. Zhu, BayesTSF: Benchmarking Uncertainty Quantification in Multivariate Time Series Forecasting from a Bayeser. **Submitted** to *International Joint Conference on Artificial Intelligence, IJCAI*, 2022
- **Q. Pan**, X. Zhang, T. Tsai and J. Zhu. Accurate and Interpretable Semi-supervised Time Series Classification via VT2. **Submitted** to *International Joint Conference on Artificial Intelligence, IJCAI*, 2022

Projects | Interpretable Machine Learning and its Applications in Spatio-Temporal data

Jun. 2018 - Present

- Semi-supervised Time Series Classification <https://github.com/pqy000/SemiTimeSeries>
- Interpretable Time Series Forecasting <https://github.com/pqy000/Deeplearning2020>
- Deep Learning Project <https://github.com/pqy000/ResNet18-pytorch>

Patents | Pending

Jun. 2020 - Present

- **Q. Pan**, W. Hu, Interpretable Time Series Training, Device and Equipment, No.CN2021101414856A
- J. Zhu, **Q. Pan**, X. Zhang, Z. Wang, Semi-supervised Time Series Classification Algorithm based on TrendMix Training. No.CN2021111601797520B

Research Experience

Graduate Research: Interpretable Semi-supervised Time Series Classification

Jul. 2021 – Present

Tsinghua University, Department of Computer Science, Jun Zhu's Group

Beijing, China

- Consider the temporal dependency in time series data when exploring the semi-supervised smoothness assumption.
- Developed an accurate and interpretable semi-supervised time series classification Virtual Trendmix Training.
- Propose a quantitative metric AUSSL to measure the interpretability of various classification methods.

Graduate Research: Interpretable Multivariate Time Series Forecasting

Jun. 2020 – Dec. 2020

Tsinghua University, RealAI, Advanced Algorithm Group

Beijing, China

- Explore the accurate and interpretable methods for multivariate time series forecasting.
- Present a model agnostic scheme of series saliency to consider time and feature dimensions coherently.
- Produce accurate time series forecasting results as well as generating temporal interpretations.

Undergraduate Research: Independent Tourist Recommendation System

Jun. 2017 – Mar. 2018

Qinghai University, Department of Computer Science, Xiaoying Wang's HDACP lab

Xining, Qinghai

- Recommend trip schedules to satisfy the unique needs of each independent traveler, such as preferred hotels, landmarks, and time availability.
- Propose a three-step recommendation algorithm. We use the Analytic Hierarchy Process model and greedy simulated annealing algorithm to select the best landmarks with high evaluation scores. Then path planning is abstracted as TSP, and simulated annealing based on roulette wheel selection is adopted for recommendation.

Undergraduate Research: Performance Evaluation of HPC Platform.

Jun. 2017 – Mar. 2018

Qinghai University, Department of Computer Science, Xiaoying Wang's HDACP lab

Xining, Qinghai

- Transplant latest benchmark HPCG adopted by TOP500 organization to the CPU+MIC heterogeneous computing platform. We analyze the HPCG source code, then optimize code for heterogeneous platforms.
- Results of performing the benchmark indicate that optimization has facilitated speedup of the HPCG benchmark.

Working Experience

Lecturer

Jul. 2018 – Jun. 2019

Qinghai University, Department of Computer Science

Xining, Qinghai

- Instructor of CS101 Introduction to C++ programming (Autumn) and CS202 Operating System (Spring).
- Build the OnlineJudge platform of department of CS, widely used among 300 undergraduates.
- Served as vice President of Young League Committee at Qinghai University.
- Served as Chief Counselor in Department of Computer Science.

Research Intern

Jul. 2020 – Dec. 2020

RealAI Technology Co., Ltd

Beijing

- Responsible for the multivariate time series analysis, containing several real datasets.
- Improvement in Accuracy 7~8% (e.g., Electricity, Air quality)

Teaching Assistant

Sep. 2019 – Jun. 2021

Tsinghua University, Department of Computer Science

Beijing

- **Head TA** 2021 Autumn, in *Students Research Training*, instructed by Prof. Jun Zhu
- **Head TA** 2019 Spring, in *Operating System*, instructed by Prof. Xiaoying Wang

Selected Honors and Awards

The 11th China Youth Science and Technology Innovation Award (The national highest honor in the field of youth science and technology in China)

2021 International Joint Conference on Artificial Intelligence, IJCAI Student Grant

2018 Global Second Prize for ASC Student Supercomputer Challenge

2017 Meritorious Winner in International Mathematical Modeling Contest

2017 China National Scholarship

Technical Skills

Programming Languages: Python, C++, C, Matlab

Libraries: Pandas, Pytorch, Numpy, Matplotlib, VS Code, Google Cloud Platform, Pycharm