# Fangyu Ding

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## Education

**Shanghai Jiao Tong University** September 2021 – March 2024 (Expected)
Master of Engineering in Computer Science Shanghai, China
- GPA 3.70/4.0
- Member of SJTU MoE Key Lab of AI, SJTU-ReThinkLab, advised by Prof. Junchi Yan.

**Shanghai Jiao Tong University** September 2017 – June 2021
Bachelor of Engineering in Computer Science and Technology Shanghai, China
- GPA 3.78/4.3, Average Score 88.60/100, CET-6 550/710

**Liaoning Province Shiyan High School** September 2014 – June 2017
Student with a Science Degree Liaoning, China
- Provincial First Prize, Chinese Physics Olympiad (CPhO), Liaoning, China, 2016.

## Selected Papers

- **Fangyu Ding**, Haiyang Wang, Zhixuan Chu, Tianming Li, Junchi Yan.
  *$S^3$GIL: Learning Sparse and Soft Subgraph for Graph Invariant Learning*, (NeurIPS 2023 **submission**)
- **Fangyu Ding**, Junchi Yan, Haiyang Wang.
  *c-NTPP: Learning Cluster-Aware Neural Temporal Point Process*, (AAAI 2023)

## (Research) Internship Experiences

**Ant Zhixin Information Technology Co., Ltd.** October 2022 – May 2023
Algorithm Engineer Intern Hangzhou, China
- **Topics**: Graph Invariant Learning and Out-of-Distribution (OOD) Generalization.
- We designed a Graph Invariant Learning (**GIL**) framework for Graph Neural Networks (**GNNs**) via invariant subgraph mining and the Optimal Transport (**OT**) theoretic differentiable top-$k$ is leveraged to extract **S**parse, **S**oft, and fully differentiable invariant **S**ubgraphs, which are the invariant subgraph extraction principles of our **S$^3$GIL**.
- We conducted extensive experiments on both graph-level and node-level classification benchmarks (with various distribution shifts), and our S$^3$GIL can outperform the GIL baselines by large margins (up to ≈15% for graph classification and up to ≈20% for node classification).

**Alibaba Damo Technology Co., Ltd.** July 2021 – September 2021
Algorithm Engineer Intern Hangzhou, China
- **Topics**: Event Sequence Learning and Sequential Variational Inference.
- We designed a sequential variational autoencoder (**SVAE**) based deep sequential clustering method to mine the latent clusters (or subsequences) in event sequence, and neural temporal point process (**NTPP**) is leveraged to model the sequential data.
- A novel cluster-aware attention mechanism is proposed to improve the **Transformer** based NTPP representation learning by considering the inherent cluster property of event sequence.

## Skills & Interests

**Programming Languages**: Python, C/C++, SQL, Shell, Julia.
**Deep Learning Frameworks**: PyTorch, PyTorch-Geometric.
**Research Interests**:
- **Currently**: Machine Learning for Graph and Sequential Data; Domain Generalization; Deep Probabilistic Models and Approximate Inference.
- **For Future**: Data Mining and Data Management for Graph and Sequential Data; Large Scale Machine Learning.