Qitian Wu

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EDUCATION

Shanghai Jiao Tong University 2018.09 - Present
M.S. in Computer Science and Engineering

- Research Topics: Machine Learning (deep generative models, representation learning, multi-task learning, semi-supervised learning) and Data Mining (social network, event sequence and recommender system)
- Core Courses: Algorithm and Analysis (A), Machine Learning (A), Natural Language Understanding (A)

Shanghai Jiao Tong University 2014.09 - 2018.07
B.E. in Microelectronics Science and Engineer

- Overall GPA: **90.2/100**, Major GPA: **91.6/100**, Rank: **2/39**
- Core Courses: C++ Programming (91), Data Structure (94), Operating System (95), Computer Organization (91), Complier Principle (94), Signal and Systems (99), Digital Signal Processing (96)

B.S. in Mathematics and Applied Mathematics (Second Major)

- Major GPA: **88.1/100**
- Core Courses: Mathematical Analysis I (100), Mathematical Analysis II (97), Advanced Algebra (98), Probability and Statistics (95), Ordinary Differential Equation, Partial Differential Equation, Abstract Algebra, Real Analysis, Complex Analysis, Differential Geometry, Numerical Analysis, Random Simulation Method

PUBLICATIONS

[1] **Qitian Wu**, Rui Gao, Hongyuan Zha, Stein Bridging: Enabling Mutual Reinforcement between Explicit and Implicit Generative Models, Arxiv Preprint, CoRR abs/1909.13035. *Under Review*

[2] Zixuan Zhang, **Qitian Wu**, Junchi Yan, Linking Prediction and Attribution: A Dual Imitation Learning Framework for Unsupervised Event Sequence Imputation. *Under Review*

[3] **Qitian Wu**, Zixuan Zhang, Xiaofeng Gao, Junchi Yan, Guihai Chen, Learning Latent Process from High-Dimensional Event Sequences via Efficient Sampling. *Conference on Neural Information Processing Systems (NeurIPS'19, acceptance rate: 20%).*

[4] **Qitian Wu**, Lei Jiang, Xiaofeng Gao, Xiaochun Yang and Guihai Chen, Feature Evolution Based Multi-Task Learning for Collaborative Filtering with Social Trust. *International Joint Conference on Artificial Intelligence (IJCAI'19, acceptance rate: 17%).*

[5] **Qitian Wu**, Yirui Gao, Xiaofeng Gao, Paul Weng, and Guihai Chen, Dual Sequential Prediction Models Linking Sequential Recommendation and Information Dissemination. *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'19, acceptance rate: 14%).*

[6] **Qitian Wu**, Hengrui Zhang, Xiaofeng Gao, Peng He, Paul Weng, Han Gao and Guihai Chen, Dual Graph Attention Networks for Deep Latent Representation of Multifaceted Social Effects in Recommender Systems. *The Web Conference (WWW'19), Oral Presentation (acceptance rate: 9%).*

[7] **Qitian Wu**, Chaoqi Yang, Xiaofeng Gao, Peng He, and Guihai Chen, EPAB: Early Pattern Aware Bayesian Model for Social Content Popularity Prediction. *IEEE International Conference on Data Mining (ICDM'18).*

[8] **Qitian Wu**, Chaoqi Yang, Hengrui Zhang, Xiaofeng Gao, Paul Weng and Guihai Chen, Adversarial Training Model Unifying Feature Driven and Point Process Perspectives for Event Popularity Prediction. *ACM International Conference on Information and Knowledge Management (CIKM'18, acceptance rate: 17%).*

[9] Chaoqi Yang, **Qitian Wu**, Xiaofeng Gao, Guihai Chen, EPOC: A Survival Perspective Early Pattern Detection Model for Outbreak Cascades. *International Conference on Database and Expert Systems Applications (DEXA'18).*

RESEARCH EXPERIENCES

Disentangled Representation Learning for Data with Latent Dependent Structures ongoing

- Proposed a framework based on Variational Auto-Encoder that could implicitly capture the dependency among latent factors and learn disentangled representation via generated samples from the decoder.

Joint Learning of Explicit and Implicit Generative Models 2019.07 - 2019.09
Advisor: Hongyuan Zha, Professor in Georgia Institute of Technology

- Designed a framework uniting Generative Adversarial Nets and Deep Energy Models via Stein discrepancy.
- Theoretically analyzed the convergence of proposed method and showed its more stable training than WGAN.
- Conducted extensive experiments and achieved superior Inception Score on CIFAR-10.

Event Sequence Generation and Relation Modelling 2019.02 - 2019.09

Advisor: Junchi Yan, Distinguished Research Professor in Shanghai Jiao Tong University (SJTU)

1) Learning Latent Process from High-Dimension Event Sequences
- Proposed a structurally and temporally attentive generative model to generate marked event sequences
- Prove the proposed random walk sampling method is equivalent to a well-defined efficient sampling process.

2) Dual Imitation Learning for Event Sequence Imputation
- Assisted in building a dual imitation learning model and implemented experiment codes.

Recommender System and User Behavior Modeling 2018.06 - 2019.02

Advisor: Paul Weng, Assistant Professor in University of Michigan & SJTU Joint Institute

1) Dual Graph Attention Networks (GAT) for Recommender Systems
- Constructed two dual GATs to represent four-fold social effects in both user and item domains.
- Designed a special policy net, based on contextual multi-armed bandit, to dynamically fuse four representations.

2) Hedge Training Linking Sequential Recommendation and Information Diffusion
- Proposed a training algorithm that allows one model to use prediction given the other as 'supervised' labels.
- Showed that this mechanism can help to distinguish false negative samples from true negative ones.

3) Automated Multi-Task Learning for Collaborative Filtering with Network Embedding
- Proposed a feature evolution unit that lets two feature spaces exchange information in a probabilistic way.
- Harnessed Bayesian Optimization to globally search optimal parameter settings for feature evolution units.

Information Diffusion Prediction in Social Networks 2017.03 - 2018.01

Advisor: Xiaofeng Gao, Associate Professor in SJTU

1) Early Pattern Aware Bayesian Model for Social Content Popularity Prediction
- Designed a Bayesian Network to capture probabilistic relations among observed and target variables.
- Implemented the model on three datasets (Twitter, Weibo, Wechat), and improve MAPE by 13.7%.

2) Adversarial Training Model for Event Popularity Prediction
- Proposed an adversarial model that unifies feature driven and point process models for popularity prediction.
- Adopted deep neural nets to parametrize the models, and implemented the codes with Python using Tensorflow.

INDUSTRY EXPERIENCE

Research Assistant, Tencent WeChat Group/Social Diffusion Team 2018.07 - 2018.10

Advisor: Peng He, Expert Researcher of Tencent

- Researched on article recommendation algorithm for Top Story application in WeChat, one of the world's largest social mobile app. with 1 billion daily active users.
- Proposed a new social recommendation model that improves AUC by 4.5% on real-world commercial dataset.

SELECTED AWARDS

- National Scholarship, *twice, top 1 in department* 2016, 2017
- Academic Excellence Scholarship (1st class), *twice, top 1 in department* 2016, 2017
- Lixin Tang Scholarship, *only 60 candidates out of ∼46000 students in SJTU* 2017, 2018
- Yuanqin Yang Scholarship, *only 3 candidates out of ∼130 students in CS department* 2019
- Outstanding Winner, INFORMS Awards, Mathematical Contest in Modeling, Data Insights Problem, *only 3 outstanding teams and 1 team with INFORMS Awards in 4748 teams* 2018
- Second Award, China Undergraduate Mathematical Contest in Modeling, *top 5.8% in 28046 teams* 2016
- First Award, Physics Competition of Chinese College Students 2015
- Outstanding Graduate of Shanghai, *top 5% in all undergraduate students in Shanghai* 2018
- Excellent Graduation Project in SJTU, *top 20% in department* 2018

SKILLS

English	TOEFL 103 (R: 27, L: 27, S: 24, W: 25) GRE 327+4.0 (V: 157, Q: 170, AW: 4.0)
Programming Languages	Python, C++, MATLAB, R, HTML5/CSS3, JavaScript
Deep Learning Tools	Tensorflow, PyTorch
Computer Skills	Git, LaTeX, Vim, Linux, MS Offices