Hongwei Zhang

3120180967@bit.edu.cn | github.com/drzhang3 | drzhang3.github.io

Education

Beijing Institute of Technology — Beijing, China
M.Eng., in Intelligent Information Processing and Control — *Aug. 2018 – Jun. 2021 (expected)*

Beijing Institute of Technology — Beijing, China
B.Eng., in Process Equipment and Control Engineering — *Sep. 2014 – Jun. 2018*

GPA: 3.8/4.0, **Rank**: 1/19(∼5%)

Research Experience

Data Center Technology Laboratory — HUAWEI 2012 Labs
Research Intern, advised by Xuecang Zhang — *Jul. 2020 – Present*

- Working on dynamic graph and sampling algorithm for large scale graph.
- Proposed a novel convolutional kernel named GCN+ from an optimization perspective, which relieves the over-smoothing inherently while achieving superior performance.

Cloud Control Systems Group — Beijing Institute of Technology
Members, advised by Weidong Zou — *Feb. 2020 – May. 2020*

- Investigated the first-order gradient-based optimization algorithm for training deep neural network.
- Proposed an new variant of Adam, called AdaL, which scale the L-1 norm of gradients.

Simple Log Service (SLS) Group — Alibaba Cloud
Research Intern, advised by Guiyang Liu — *Aug. 2019 – Nov. 2019*

- Introduced factorized inference to learn a robust and interpretable representation for multivariate time series.
- Developed an unsupervised anomaly detection algorithm, which integrates VAE, Transformer, channel-wise attention and nonlinear state space model.

Publications or Manuscripts

1. **Hongwei Zhang**, Tijin Yan, Zejun Xie, Yuanqing Xia, Yuan Zhang.
   Revisiting Graph Convolutional Network on Semi-Supervised Node Classification from an Optimization Perspective.
   Submitted to a conference, under review.
2. Tijin Yan, **Hongwei Zhang**, Zirui Li, Yuanqing Xia.
   Stochastic Graph Recurrent Neural Network.
   Submitted to conference, under review.
3. **Hongwei Zhang***, Weidong Zou*, Yuanqing Xia, Tijin Yan, Weipeng Cao.
   AdaL: An Adaptive Linearization Gradient Method.
   Submitted to conference, under review.
4. **Hongwei Zhang**, Tijin Yan, Guiyang Liu, Yuanqing Xia, Yufeng Zhan.
   TransAnomaly: Unsupervised Anomaly Detection in Multivariate Time Series through Factorized Inference.
   To be submitted.
5. Qi Ming, Zhiqiang Zhou, Lingjuan Miao, **Hongwei Zhang**, Linhao Li.
   Dynamic Anchor Learning for Arbitrary-Oriented Object Detection.
   Submitted to conference, under review.

Selected Awards

Outstanding Graduate Award, Beijing	2018
Excellent Student Award, Beijing Institute of Technology	2017
Third prize of The Chinese Mathematics Competitions, China	2015

Selected Projects

Similar Sentence Pairs Judgment Competition of COVID-19 — Mar. 2020 – Mar. 2020
Organized by Alibaba DAMO Academy and TIANCHI

- Tuned NEZHA, RoBERTa on COVID sentence pairs dataset using adversarial training. **Rank**: 18/940(∼ 2%)

Data Collections and Analysis of Parkinson's Disease — Dec. 2018 – June. 2019
Cooperated with Neurology of Peking Union Medical College Hospital

- Collected the PD's data by accelerometer and Gyroscope and made classification using ML algorithms.
- Designed system architecture, including data sending and receiving, communication, storage, etc.