

# Hongwei Zhang

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## EDUCATION

### Beijing Institute of Technology

*M.Eng., in Intelligent Information Processing and Control*

Beijing, China

*Aug. 2018 – Jun. 2021 (expected)*

### Beijing Institute of Technology

*B.Eng., in Process Equipment and Control Engineering*

Beijing, China

*Sep. 2014 – Jun. 2018*

**GPA:** 3.8/4.0, **Rank:** 1/19 (~5%)

## RESEARCH EXPERIENCE

### Data Center Technology Laboratory

*Research Intern, advised by Xuechang Zhang*

HUAWEI 2012 Labs

*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

*Members, advised by Weidong Zou*

Beijing Institute of Technology

*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

*Research Intern, advised by Guiyang Liu*

Alibaba Cloud

*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

- 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.**
- Tijin Yan, **Hongwei Zhang**, Zirui Li, Yuanqing Xia.  
[Stochastic Graph Recurrent Neural Network.](#)  
**Submitted to a conference, under review.**
- Hongwei Zhang\***, Weidong Zou\*, Yuanqing Xia, Tijin Yan, Weipeng Cao.  
AdaL: An Adaptive Linearization Gradient Method.  
**Submitted to a conference, under review.**
- Hongwei Zhang**, Tijin Yan, Guiyang Liu, Yuanqing Xia, Yufeng Zhan.  
TransAnomaly: Unsupervised Anomaly Detection in Multivariate Time Series through Factorized Inference.  
**To be submitted.**
- Qi Ming, Zhiqiang Zhou, Lingjuan Miao, **Hongwei Zhang**, Linhao Li.  
[Dynamic Anchor Learning for Arbitrary-Oriented Object Detection.](#)  
**Thirty-Fifth AAAI Conference on Artificial Intelligence (AAAI), 2021.**

## 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.