# Hongwei Zhang

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## 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($\sim$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 a conference, under review.**
3. **Hongwei Zhang***, Weidong Zou*, Yuanqing Xia, Tijin Yan, Weipeng Cao.
   AdaL: An Adaptive Linearization Gradient Method.
   **Submitted to a 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.
   **Thirty-Fifth AAAI Conference on Artificial Intelligence (AAAI), 2021.**

## SELECTED AWARDS

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| 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($\sim$ 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.