# KAICHUANG ZHANG

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## RESEARCH INTERESTS

**Distributed Learning**: Specialized in Security (Attack & Defense), Robustness, Fairness, Privacy, and other critical aspects of (Decentralized) Federated Learning and Distributed Systems.

**AI in Domain Applications**: Computer vision, robotics, IoT, and large language models, etc.

## EDUCATION

**University of Texas Rio Grande Valley, USA**  September 2023 - Present
M.S. in Electrical Engineering  GPA: 4.00/4.00

**Beijing University of Technology, China**  September 2017 - July 2020
M.S. in Computer Technology  GPA: 3.58/4.00

**Nanyang Institute of Technology, China**  September 2012 - July 2016
B.S. in Computer Science and Technology  GPA: 3.13/4.00

## ACADEMIC & INDUSTRIAL EXPERIENCE

**Dr.Ping Xu's Lab in UTRGV**  September 2023 - August 2016
Graduate Research Assistant
· Focus on (Decentralized) Federated Learning.

**Institute of Software Chinese Academy of Sciences**  April 2022 - October 2023
Research and Development Engineer
· Focus on Machine Learning for System.

**Baidu Inc.**  May 2020 - August 2022
Research and Development Engineer
· Focus on Online Advertising.

**Dr.Bo Liu's Lab in BJUT**  September 2017 - July 2020
Graduate Research Assistant
· Focus on Unsupervised Representation Learning in Computer Vision.

## PUBLICATIONS

· [J1] **Kaichuang Zhang**, Ping Xu, Zhi Tian **CPB-DFL: Communication-Efficient Privacy-Preserving and Byzantine-Robust Decentralized Federated Learning** (Ready to submit).

· [C1] **Kaichuang Zhang**, Alina Bashara, Ping Xu **Byzantine-Robust Decentralized Federated Learning via Local Performance Checking** International Conference on Neural Information Processing (ICONIP) 2024 (**Accepted**)

· [C2] **Kaichuang Zhang**, Ping Xu, Zhi Tian **Decentralized Federated Learning under Meta Computing** International Conference on Meta Computing (ICMC) 2024 (**Accepted**)

· [C3] **Kaichuang Zhang**, Ping Xu, Zhi Tian **Robust Decentralized Federated Learning Against both Distributional Shifts and Byzantine Attacks** International Conference on Robust Statistics (ICORS) and the Conference on Data Science, Statistics and Visualisation (DSSV) (ICORS meets DSSV) 2024 (**Abstract Accepted**).

· [C4] **Kaichuang Zhang**, Ping Xu, Zhi Tian **Distributional and Byzantine Robust Decentralized Federated Learning** 59th Annual Conference on Information Science and Systems (CISS) 2025 (**Accepted**)

- [**P1**] Xinyuan Wang, PengPeng Hou, Jiatai He, **Kaichuang Zhang**, Chenyu Ma, Jiatai He, Jiageng Yu, Yanjun Wu. 2022.**Linux System Kernel Configuration Policy Optimization Method based on Machine**. CN Patent, CN117172093A filed July 24, 2023 and issued Dec 5, 2023.

- [**P2**] PengPeng Hou, **Kaichuang Zhang**, Chenyu Ma, Jiatai He, Jiageng Yu, Yanjun Wu. **Software Parameter Tuning Methods, Container Management Platform, Storage Media, and Systems**. CN Patent, CN11562860A filed Oct 21,2022 and issued Jan 20, 2023.

- [**P3**] Pengpeng Hou, Guo Chen, **Kaichuang Zhang**, Jiageng Yu, Yanjun Wu. **An Automated Kernel Configuration Item Classification Method and Device**. CN Patent, CN115422361A filed Sep 29,2022 and issued Dec 2, 2022.

- [**P4**] Bo Liu, **Kaichuang Zhang**. 2020. **An Unsupervised Learning Method of Deep Neural Network based on Similarity Distance Between Objects and Within objects**. CN Patent, CN111401519A filed March 6, 2020 and issued July 10, 2020.

## SKILLS

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|---|---|
| **Programming Languages** | C, C++, Python, Shell, Golang, etc. |
| **Deep Learning Framework** | Pytorch, Tensorflow, Caffe, etc. |
| **Distributed Computation** | Hadoop, Spark, Docker, Kubernetes, etc. |

## HONORS & AWARDS

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| UTRGV ECE Outstanding Student of Year 2024 | Feb 2024 |
| Presidential Research Fellowship of EECE in UTRGV | Sep 2023 |
| The Second Prize, The 3nd Master Algorithm Contest of BJUT | Apr 2019 |
| The Second Prize, The 7th China Software Cup College Student Software Design Cup | May 2018 |
| The Second Prize, The 2nd Master Algorithm Contest of BJUT | Apr 2018 |
| Outstanding Graduate of the School of Computer Science, NYIST | July 2016 |
| The Third Prize, The 2nd ACM Nanyang Institute of Technology Competition | July 2015 |
| The Third Prize, The 6th Blue Bridge Cup Programming Contest Henan Province | May 2015 |
| Gold Prize, The 6th ACM-ICPC Henan Province | May 2014 |
| The Third Prize, The 5th Bule Bridge Cup Programming(C/C++) Contest Finals | May 2014 |
| The Second Prize, The 5th Bule Bridge Cup Programming(C/C++) Contest Henan Prov. | May 2014 |
| Excellence Prize, The 36th ACM-ICPC Regional Invitational Contest, NWPU | May 2013 |
| Silver Prize, The 4th ACM-ICPC Henan Province | May 2012 |