

Kaichuang Zhang

kaichuang.zhang01@utrgv.com — +1-(956)651-8637 — <https://kaichuangzhang.github.io/>

RESEARCH INTERESTS

Federated Learning: Security(Attack & Defense), Robustness and Fairness;
Crossing AI with Other Fields: Computer Vision, Robotics, IoT, and More.

EDUCATION

University of Texas Rio Grande Valley , Texas, USA	Sep.2023 — Present
Master of Science in Electrical Engineering	Cumulative GPA: 4.00/4.00
Thesis Title: Fairness and Robustness in Decentralized Federated Learning. (In-Progress)	
Beijing University of Technology , Beijing, China	Sep.2017 — Jul.2020
Master of Science in Computer Technology	Cumulative GPA: 3.58/4.00
Thesis Title: An Unsupervised Feature Representation Learning Method based Object Similarity.	
Nanyang Institute of Technology , Henan, China	Sep.2012 — Jul.2016
Bachelor of Science in Computer Science and Technology	Cumulative GPA: 3.13/4.00

ACADEMIC & INDUSTRIAL EXPERIENCE

Dr.Ping Xu's Lab in UTRGV Texas, USA	Sep.2023 — Present
<i>Research Assistant</i>	Advisor: Ping Xu
Focus on Decentralized Federated Learning.	
Institute of Software Chinese Academy of Sciences Beijing, China	Apr.2022 — Oct.2023
<i>Research & Develop Engineer</i>	Advisor: Pengpeng Hou
Focus on Performance Tuning in Cloud Environment.	
Baidu Inc. Beijing, China	May.2020 — Apr.2022
<i>Research & Develop Engineer</i>	
Focus on Computational Advertising.	
Dr.Bo Liu's Lab in BJUT Beijing, China	Sep.2017 — July.2020
<i>Research Assistant</i>	Advisor: Bo Liu
Focus on Unsupervised Representation Learning.	

PUBLICATIONS

CONFERENCE PAPER

- **Kaichuang Zhang**, Alina Bashara, Ping Xu "Byzantine-Robust Decentralized Federated Learning via Local Performance Checking" ESANN 2024 (**Submitted**)
- **Kaichuang Zhang**, Ping Xu, Zhi Tian "Decentralized Federated Learning under Meta Computing" ICMC 2024 (**Accepted**) This paper propose a novel DFL algorithm termed Communication-efficient Privacy-preserving, and Byzantine-robust DFL (CPB-DFL) which simultaneously considered communication bottleneck, privacy concerns, Byzantine attacks.

PATENTS

- 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.
- 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.
- 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.
- 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

- **Programming:** C, C++, Python, Shell, Golang and other programming languages;
- **Deep Learning Framework:** Pytorch, Tensorflow, Caffe;
- **Distributed Computation:** Hadoop, Spark;
- **Virtualization:** Docker, Kubernetes.

HONORS & AWARDS

- UTRGV ECE **Outstanding Student** of the year 2024 Feb. 2024
- **Presidential Research Fellowship** of EECE in UTRGV Sep. 2023
- **The Second Prize**, The 3rd 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 Blue Bridge Cup Programming(C/C++) Contest Finals May. 2014
- **The Second Prize**, The 5th Blue 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