

Xinpeng Wang

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EDUCATION

School of Science and Engineering, The Chinese University of Hong Kong, Shenzhen, China

Sep. 2023 - Present

Master of Philosophy (Computer and Information Engineering)

- TOEFL: 99 (Reading 29, Listening 25, Speaking 23, Writing 22)

School of Computer Science, Shaanxi Normal University, Shaanxi, China

Sep. 2019 – Jun. 2023

Bachelor of Science (Computer Science)

- GPA: 3.72/5 (Rank: 6/98)
- Core Courses: Discrete Mathematics (97), Linear Algebra (94), Machine Learning (94), Data Mining (92)

RESEARCH EXPERIENCES

Federated Domain Generalization Algorithm Based on Feature Alignment and Expansion

Jun. 2023 - Present

| CUHK-Shenzhen, China | Research Assistant

Advisor: Xiaoying Tang, Assistant Professor at School of Science and Engineering, CUHK-Shenzhen

- Evaluated several SOTA federated domain generalization algorithms under different levels of data heterogeneity.
- Concluded that these algorithms exhibited highly unstable performance across varying degrees of heterogeneity.
- Improved the domain generalization capability of FedSR by combining feature alignment and feature expansion techniques.

Research on Domain Generalization Method Based on Data Augmentation

Dec. 2022 – Apr. 2023

| CUHK-Shenzhen, China | Research Assistant

Advisor: Xiaoying Tang, assistant professor at School of Science and Engineering, CUHK-Shenzhen

- Investigated the ability of generating effective perturbation of AugMix and DeepAugment on various datasets.
- Enhanced DeepAugment's capability to generate effective perturbation on small-scale images by embedding AugMix.

Automatic Detection of Retinopathy of Prematurity

Feb. 2022 – Aug. 2022

| Lehigh University, US | Research Assistant

Advisor: Lifang He, assistant professor at Engineering and Applied Science, Lehigh University, US

- Applied image segmentation network to segment blood on the retina images.
- Trained various classification networks such as ResNet50, Efficient Net, ViT to detect ROP and compared their performance.
- Applied contrastive learning and various data augmentation methods to reduce the negative impact from imbalance datasets.

INTERN

Intel Asia-Pacific Research & Development Ltd, Shanghai | Software Engineer

Jul. 2022 - Oct 2022

- Investigated the existing inference server and analyzed the advantages and disadvantages of each system.
- Learned to use the NVIDIA Triton Inference Server, and master the logic between various functional components.

PROJECT

FL-Bench

Nov. 2023 - Present

<https://github.com/KarhouTam/FL-bench> | Contributor

- Implemented heterogeneous data partition on DomainNet and PACS data sets.
- Implemented several SOTA federated domain generalization algorithms and integrated them into FL-Bench.
- Has obtained over 300 stars on GitHub.

AWARDS

China National Scholarship (The Highest Scholarship in China, Top 0.7%)	Sep. 2020
Mathematics Competition of Chinese Undergraduate Students 1 st prize (Shaanxi Area, Top 3%)	Dec. 2020
Mathematics Competition of Chinese Undergraduate Students 1 st prize (Shaanxi Area, Top 3%)	Dec. 2021
Outstanding Graduate (Top 4%)	Jun. 2023
Contemporary Undergraduate Mathematical Contest in Modeling 2 nd prize (Shaanxi Area)	Sep. 2021
The 45 th ICPC Asia Regional Contest Shanghai Site Honorable Mention	Dec. 2020