Heng Zhou

MSU, MO 65806

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Education

Ning Xia University	**Aug 2022 - May 2024**
M.S. Electrical Engineering and Computer Science **GPA3.43**	*NXU, YinChuan*

Relevant courses: Data Structures, Efficient Algorithms, Database Management, Artificial Intelligence, Machine Learning, Computer Vision, Optimizations, Principles of Data Science, Deep Neural Network

Missouri State University	**Aug 2023 - May 2024**
M.S. Master of professional study **GPA3.48**	*MSU, Missouri State*

Relevant courses: Comp Network, Cloud, Int Safety

Hunan University of Science and Technology	**Aug 2015 - September 2019**
B.S. Logistics Management **GPA3.65**	*HNUST, XiangTan*

Relevant courses: Advanced Mathematics, Linear Algebra, Probability Theory, Game Theory, Operations Research, Econometrics, Supply Chain Management

Technical Skills

Programming Languages: Java, Python, C++, SQL, Swift
Tools: Docker, Request, Matplotlib, OpenSearch, Pandas, BeautifulSoup, Selenium, AWS, IntelliJ Idea, WebStorm
Front-end: React, Vue, Node js, HTML, CSS, JavaScript
Back-end: Springboot, SSM, MySQL, Redis, Kafka, ElasticSearch
Machine Learning: CNN, ResNet, Model Evaluation
GRE: 330 **IELTS**: 6.5

Experience

Southern University of Science and Technology	**June 2024 – Now**
Research Assistant	*SUSTech, Shenzhen*

- Designed and conducted experiments in federated learning and data privacy, validating key hypotheses and contributing to ongoing research projects.
- Co-authored and edited research papers in machine learning and health informatics, preparing manuscripts for submission to leading conferences and journals.
- Generated and developed innovative research ideas, leading to new project proposals and expanding the research scope of the team in privacy-preserving data analysis.

Publications and Academic Achievements

Structural Equivariance Self-Supervised Learning for Facial Pose Estimation	**March 2022 – July 2023**
Published in the 2023 IEEE International Conference on Multimedia and Expo (ICME)	*NXU, Yinchuan*

- A deep learning framework was developed for facial pose estimation in challenging conditions, such as occlusions and varied lighting, using self-supervised and contrastive learning on large-scale, unlabeled video data. Innovative data augmentation techniques were introduced to significantly improve model generalization, outperforming existing methods across multiple datasets. The work involved leading the development of the experimental framework, applying advanced learning techniques, and fine-tuning model parameters to enhance accuracy and reliability, particularly in handling occlusions and pose variations.

FedVital: Federated Reconstruction of Fine-grained Vital Signs Under Motion Artifacts	**June 2024 – Sep 2024**
Published in the ACM International Conference on Mobile Systems 2025	*SUSTech,Shenzhen*

- Introduces a framework to tackle challenges in federated learning due to data heterogeneity in physiological signals. It proposes a hierarchical training strategy to avoid local optima, incorporates an attention mechanism, and uses Gumbel Softmax to filter poor-quality weights, improving model stability and convergence. This approach enhances the accuracy of health monitoring across devices by addressing data inconsistencies and preserving privacy.