GUANGYU SUN

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Orlando, Florida

EDUCATION

University of Central Florida *Aug. 2022 - Now*
Ph.D. student in Computer Science.

University of Rochester *Aug. 2020 - May. 2022*
Master of Science in Computer Science. GPA: 4.0/4.0

University of Missouri-Columbia *Aug. 2017 - May. 2019*
Bachelor of Science in Computer Science. GPA: 3.7/4.0

Shandong University *Sep. 2015 - Jun. 2017*
Bachelor of Engineering in Computer Science and Technology. GPA: 4.1/5.0

RESEARCH INTERESTS

Federated Learning, Multi-modality Learning, Generative AI ...

PUBLICATIONS

FedPerfix: Towards Partial Model Personalization of Vision Transformers in Federated Learning
Guangyu Sun, *Matias Mendieta, Jun Luo, Shandong Wu, Chen Chen*
2023 IEEE/CVF International Conference on Computer Vision (ICCV)

Towards Multi-modal Transformers in Federated Learning
Guangyu Sun, *Matias Mendieta, Aritra Dutta, Xin Li, Chen Chen*
2024 European Conference on Computer Vision (ECCV)

Navigating Heterogeneity and Privacy in One-Shot Federated Learning with Diffusion Models
Matias Mendieta, ***Guangyu Sun****, Chen Chen*
arXiv, 2024

Conquering the Communication Constraints to Enable Large Pre-Trained Models in Federated Learning
Guangyu Sun, *Matias Mendieta, Taojiannan Yang, Chen Chen*
arXiv, 2022

Anomaly Crossing: A New Method for Video Anomaly Detection as Cross-domain Few-shot Learning
Guangyu Sun*, Zhang Liu*, Lianggong Wen, Jing Shi, Chenliang Xu. (* joint 1st authors)*
arXiv, 2021

Deep Learning Detection of Inaccurate Smart Electricity Meters: A Case Study
Ming Liu, Dongpeng Liu*,* ***Guangyu Sun****, Yi Zhao, Duolin Wang, Fangxing Liu, Xiang Fang, Qing He, Dong Xu. (* joint 1st authors)*
IEEE Industrial Electronics Magazine (Volume: 14, Issue: 4, Dec. 2020)

Assessing Environmental Oil Spill Based on Fluorescence Images of Water Samples and Deep Learning
Dongpeng Liu, Ming Liu*,* ***Guangyu Sun****, Zhiqian Zhou, Duolin Wang, Fei He, Jiaxin Li, Jiacheng Xie, Ryan Gettler, Eric Brunson, Jeffery Steevens, Dong Xu. (* joint 1st authors)*
Journal of Environmental Informatics (Volume: 42, Issue: 1, Sep. 2023)

RESEARCH EXPERIENCE

Research Assistant (ORC Fellow) *Aug. 2022 - Now*
Center for Research in Computer Vision (CRCV), University of Central Florida

- Investigating methods on **efficient fine-tuning** and **federated learning**.

Research Assistant *Aug. 2020 - May 2022*
University of Rochester

- Investigating **video anomaly detection and anticipation** tasks under collaboration with Corning Inc.

Undergraduate Research Assistant *Feb. 2018 - May 2020*
Digital Biology Laboratory (DBL), University of Missouri-Columbia

- Exploring the application of deep learning methods on anomaly detection and environment assessment.

WORK EXPERIENCE

Research Intern *Jun. 2022 - Aug. 2022*
Pythonic Inc, Milwaukee, WI
- Deployed a multi-modal model, LayoutLMv3, for document understanding tasks.
- Proposed efficient fine-tuning methods, multi-modal prompt tuning, and adapters, to accelerate the training and perform better when handling new data with domain gaps.

Teaching Assistant *Aug. 2021 - Dec. 2021*
University of Rochester, Rochester, NY
- Head TA for CSC 244/444: Knowledge Representation and Reasoning in AI.

Machine Learning Engineer Intern (Remote) *Sep. 2020 - Dec. 2021*
Automat Solutions, Fremont, CA
- Designed and implemented electrolyte material generation model for optimal targets using the Bayesian Optimization and Reinforcement Learning model (DDPG)
- Designed and implemented the database for generated recipes and experimental results.

SKILLS AND ACADEMIC SERVICE

Language: Python
Framework: Pytorch
Conference Reviewer: CVPRW, ICHI
Journal Reviewer: IEEE TITS, IEEE TNNLS, Journal of Real-Time Image Processing