# GUANGYU SUN

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Orlando, Florida

## EDUCATION

**University of Central Florida** *Aug. 2022 - Now*
*Ph.D. in Computer Science (expected 2026).*

**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; Large Language Models; 3D Reconstruction; Generative AI; Multi-modality Learning; Efficient Fine-tuning

## PUBLICATIONS

**From Frames to Clips: Efficient Key Clip Selection for Long-Form Video Understanding**
***Guangyu Sun***, *Archit Singhal, Burak Uzkent, Mubarak Shah, Chen Chen, Garin Kessler*
*arXiv, 2025*

**EGGS: Exchangeable 2D/3D Gaussian Splatting for Geometry-Appearance Balanced Novel View Synthesis**
*Yancheng Zhang,* ***Guangyu Sun****, Chen Chen*
*2025 Advances in Neural Information Processing Systems (NeurIPS), Spotlight (Top 3%)*

**Closer to Reality: Practical Semi-Supervised Federated Learning for Foundation Model Adaptation**
***Guangyu Sun****, Jingtao Li*, Weiming Zhuang, Chen Chen, Chen Chen, Lingjuan Lyu (* joint 1st authors)*
*arXiv, 2025*

**Why Reasoning Matters? A Survey of Advancements in Multimodal Reasoning**
*Jing Bi, Susan Liang, Xiaofei Zhou, Pinxin Liu, Junjia Guo, Yunlong Tang, Luchuan Song, Chao Huang,* ***Guangyu Sun****, Jinxi He, Jiarui Wu, Shu Yang, Daoan Zhang, Chen Chen, Lianggong Bruce Wen, Zhang Liu, Jiebo Luo, Chenliang Xu*
*arXiv, 2025*

**VERIFY: A Benchmark of Visual Explanation and Reasoning for Investigating Multimodal Reasoning Fidelity**
*Jing Bi, Junjia Guo, Susan Liang,* ***Guangyu Sun****, Luchuan Song, Yunlong Tang, Jinxi He, Jiarui Wu, Ali Vosoughi, Chen Chen, Chenliang Xu*
*arXiv, 2025*

**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*
*2025 IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*

**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)*

**Exploring Parameter-Efficient Fine-Tuning to Enable Foundation Models in Federated Learning**
***Guangyu Sun****, Umar Khalid, Matias Mendieta, Pu Wang, Chen Chen*
*2024 IEEE International Conference on Big Data*

**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.*
*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.*
*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)*

## WORK EXPERIENCE

**Applied Scientist Intern** *May 2025 - Nov. 2025*
*Amazon Prime Video, Seattle, WA*

- Worked on long-form video understanding with video large language models.

**Research Intern on Vision Foundation Model and Generative AI** *Aug. 2024 - Nov. 2024*
*Sony AI America Inc., remote*

- Investigated enhancing the vision foundation model adaptation with semi-supervised federated learning.
- For object detection, proposed a Mixture-of-Experts method under a semi-supervised federated learning setting with frozen backbones.

**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** *Sep. 2020 - Dec. 2021*
*Automat Solutions, remote*
- 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, WACV, AAAI
**Journal Reviewer:** IEEE TPAMI, IEEE TITS, IEEE TNNLS, Journal of Real-Time Image Processing