Shitong Sun

+447423283838 · sunshitong315@gmail.com · GitHub: https://suntongtongtong.github.io ·

Research Interests

Temporal Knowledge Graph, Video Understanding, Multimodal Image Retrieval, Federated Learning,

Education

Queen Mary University of London, PhD   2020 - 2024
- Thesis topic： Knowledge Transfer in Deep Learning Generalisation
- Supervisor： Prof. Shaogang Gong, Fellow of the Royal Academy of Engineering (FREng)

University of Trento, Visiting Scholar   2023 - 2024
- Research topic： Trustworthy AI
- Supervisor： Prof. Nicu Sebe

KU Leuven, Master   2017 - 2018
- Advanced Master of Artificial Intelligence
- Cum Laude (with Honor)
- Supervisor: Prof. Tinne Tuytelaars

KU Leuven, Bachelor   2015 - 2017
- Electronic Engineering
- Double degree program with Beijing Jiaotong University
- Cum Laude (with Honor)

Beijing Jiaotong University, Bachelor   2013 - 2017
- Electrical Engineering and Automation
- Pilot Class: Zhou Enlai Class Member (Top 5%)

Working Experience

Advanced Industry Research Lab, Research Scientist   2024 - Now
- **Smart Glasses**： Leveraging Multimodal Large Language Models (MLLM) for long video understanding.

Queen Mary University of London, PhD student   2020 - 2024
- **Multimodal Large Language Models**： In published papers, extensively utilized various advanced multimodal large language models, including CLIP (image-text alignment), BLIP (vision-language understanding), LLaVA (vision-language understanding), ChatGPT (language understanding), GroundingDINO (object detection), Stable Diffusion (image generation), and Segment Anything (image segmentation).
- **Trustworthy AI**： Conducted in-depth research on privacy-preserving federated learning based on distributed learning, proposing privacy protection solutions at both image and attribute levels, systematically addressing data security challenges.

Queen Mary University of London, Teaching Fellow
- Algorithms and Data Structures   2024

Queen Mary University of London, Teaching Assistant
- Machine Learning for Visual Data Analysis   2024
- Machine Learning   2023
- Machine Learning   2022
- Deep Learing and Computer Vision   2022
- Deep Learing and Computer Vision   2021

Institute of Automation, Chinese Academy of Science, Algorithm Engineer   2018 - 2020
- **Government project**: Reconstruction of human 3D model based on Densepose, fix it to Intelligent Scene Exploration and Evaluation (ISEE) platform
- **Real-world project**: Apply pedestrian-attribute-recognition algorithm to Skiing app

- **Research**: Develop ReID algorithm and enhance its performance on market1501, Duke datasets

KU Leuven, Postgraduate student   2017 - 2018
- **Master Topic**: Using data prototypes to avoid forgetting in continual learning

PUBLICATIONS

[1] **Shitong Sun**, Chenyang Si, Guile Wu, Shaogang Gong."Federated Zero-Shot Learning with Mid-Level Semantic Knowledge Transfer", in **Pattern Recognition,** Vol.156, 110824, December 2024.
[2] **Shitong Sun**, Guile Wu, Shaogang Gong. "Decentralised Person Re-Identification with Selective Knowledge Aggregation", in **British Machine Vision Conference,** 2021.
[3] Jiayi Lin, **Shitong Sun**[*], Shaogang Gong, "GridCLIP: One-Stage Object Detection by Grid-Level CLIP Representation Learning", in Pattern Recognition, corresponding anthor.
[4] Qilei Li, **Shitong Sun**[*], Weitong Cai, Shaogang Gong. "Leverage Cross-Domain Variations for Generalizable Person ReID Representation Learning", in Pattern Recognition, corresponding anthor.
[5] **Shitong Sun**, Jindong Gu, Shaogang Gong. "Benchmarking Robustness of Compositional Image Retrieval", in **NeurIPS 2023 Workshop**.
[6] **Shitong Sun**, Ke Han, Yukai Huang, Weitong Cai, Jifei Song, Zhensong Zhang." EgoGraph: Temporal Knowledge Graph for Egocentric Video Understanding", in submission to CVPR 2026.
[7] **Shitong Sun**, Fanghua Ye, Shaogang Gong. "Training-free Zero-shot Composed Image Retrieval with Local Concept Reranking", in submission to IEEE Transactions on Circuits and Systems for Video Technology.
[8] Sicheng Yang, Yukai Huang, Weitong Cai, **Shitong Sun**, You He, Jiankang Deng, Hang Zhang, Jifei Song, Zhensong Zhang "Plug-and-Play Clarifier: A Zero-Shot Multimodal Framework for Egocentric Intent Disambiguation", in AAAI 2026.
[9] Jingwen Guo, Hong Liu, **Shitong Sun**, Tianyu Guo, Min Zhang, Chenyang Si. "FSAR: Federated Skeleton-based Action Recognition with Adaptive Topology Structure and Knowledge Distillation", in **International Conference on Computer Vision**, 2023.

AWARDS

• Research funding for Trustworthy AI, Alan Turing Institute	£4000, 2023
• Graduated with Cum Laude Master Honors, KU Leuven	2018
• Graduated with Cum Laude Bachelor Honors, KU Leuven	2017
• Study Scholarship, Beijing Jiaotong University	2015
• Study Scholarship, Beijing Jiaotong University	2014

SKILLS

- Language: English IELTS 6.5, fluent in both spoken and written English
- 7 years of coding experience, familiar with Python, PyTorch, MLLM

ACADEMIC SERVICE

Journal Reviewer
- International Journal of Computer Vision
- Neurocomputing
- IEEE Transactions on Emerging Topics in Computational Intelligence
- IEEE Internet of Things Journal

Conference Reviewer
- IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR)
- Conference on Neural Information Processing Systems (NeurIPS)
- International Conference on Learning Representations (ICLR)

Workshop Organization
- Chaired the BMVA workshop on "Trustworthy Multimodal Learning with Foundation Models", organizing keynote talks from Samsung, Toshiba, Wayve and universities including Oxford, Glasgow and Sheffield, attracting 80+ industry professionals