

# SUNCHENG XIANG

Assistant Professor

School of Biomedical Engineering  
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## Research Interests

### **Machine Learning and Computer Vision**

Domain Adaptation, Image Generation

Medical Image Analysis, Robotic Surgery, 3D Reconstruction

Image Retrieval, Multimodal Foundation Models,, Representation Learning

## Position

**Shanghai Jiao Tong University**, Shanghai, China

Assistant Professor

Aug 2022 - Present

School of Biomedical Engineering

## Education

**Shanghai Jiao Tong University**, Shanghai, China

2017 - 2022

Ph.D in Computer Science and Technology

**National University of Defense Technology**, Changsha, China

2014 - 2017

M.S in Software Engineering

**Changsha University of Science & Technology**, Changsha, China

2010 - 2014

B.S in Electrical Engineering and Automation

## Preprints

[1]. VM-UNet: Vision Mamba UNet for Medical Image Segmentation

arXiv preprint arXiv:2402.02491, 2024.

Jiacheng Ruan, **Suncheng Xiang**✉

[2]. Supervised Contrastive Learning for Fine-grained Chromosome Recognition

arXiv preprint arXiv:2308.00929, 2023.

Ruijia Chang, **Suncheng Xiang**, Chengyu Zhou, Kui Su, Dahong Qian, Jun Wang

[3]. Towards Open-set Gesture Recognition via Feature Activation Enhancement and Orthogonal Prototype Learning

arXiv preprint arXiv:2308.00929, 2023.

Chen Liu, Can Han, Chengfeng Zhou, Crystal Cai, **Suncheng Xiang**, Hualiang Ni, Dahong Qian

- [4]. Towards Discriminative Representation with Meta-learning for Colonoscopic Polyp Re-Identification  
arXiv preprint arXiv:2308.00929, 2023.  
**Suncheng Xiang**<sup>✉</sup>, Qingzhong Chen, Shilun Cai, Chengfeng Zhou, Crystal Cai, Sijia Du, Zhengjie Zhang, Yunshi Zhong, Dahong Qian
- [5]. Learning Robust Visual-Semantic Embedding for Generalizable Person Re-identification  
arXiv preprint arXiv:2304.09498, 2023.  
**Suncheng Xiang**, Jingsheng Gao, Mengyuan Guan, Jiacheng Ruan, Chengfeng Zhou, Ting Liu, Dahong Qian, Yuzhuo Fu
- [6]. Attribute Analysis with Synthetic Dataset for Person Re-Identification  
arXiv preprint arXiv:2006.07139, 2020.  
**Suncheng Xiang**, Yuzhuo Fu, Guanjie You, Ting Liu

## Journal Publications

- [7]. Deep Learning–Based Facial and Skeletal Transformations for Surgical Planning  
Journal of Dental Research (**JDR**), 2024. (**IF=7.6**)  
Jiahao Bao, Xiangning Zhang, **Suncheng Xiang**, et al.
- [8]. SubFace: Learning with Softmax Approximation for Face Recognition  
Multimedia Tools and Applications (**MTA**), 2024. (**IF=3.6**)  
**Suncheng Xiang**<sup>✉</sup>, Hongwei Xu, Dahong Qian
- [9]. Toward an End-to-End Implicit Addressee Modeling for Dialogue Disentanglement  
Multimedia Tools and Applications (**MTA**), 2024. (**IF=3.6**)  
Jingsheng Gao, Zeyu Li, **Suncheng Xiang**, Zhuowei Wang, Ting Liu, Yuzhuo Fu
- [10]. A Simple Normalization Technique Using Window Statistics to Improve the Out-Of-Distribution Generalization on Medical Images  
IEEE Transactions on Medical Imaging (**IEEE TMI**), 2024. (**IF=10.6**)  
Chengfeng Zhou, Jun Wang, **Suncheng Xiang**, Feng Liu, Hefeng Huang, Dahong Qian
- [11]. Rethinking Person Re-Identification via Semantic-Based Pretraining  
ACM Transactions on Multimedia Computing, Communications and Applications (**ACM TOMM**), 2023. (**IF=5.1**)  
**Suncheng Xiang**, Dahong Qian, Jingsheng Gao, Zirui Zhang, Ting Liu, Yuzhuo Fu
- [12]. Editing Outdoor Scenes with A Large Annotated Synthetic Dataset  
Multimedia Tools and Applications (**MTA**), 2023. (**IF=3.6**)  
Mingye Xie, Zongwei Liu, **Suncheng Xiang**, Ting Liu, Yuzhuo Fu
- [13]. Deep Multimodal Representation Learning for Generalizable Person Re-identification  
Machine Learning (**ML**), 2023. (**IF=7.5**)  
**Suncheng Xiang**, Hao Chen, Wei Ran, Zefang Yu, Ting Liu, Dahong Qian, Yuzhuo Fu

- [14]. Deep Learning-based PET/MR Radiomics for the Classification of Annualized Relapse Rate in Multiple Sclerosis  
Multiple Sclerosis and Related Disorders (**MULT SCLER RELAT DIS**), 2023. (**IF=4.808**)  
Sijia Du, et al., **Suncheng Xiang**, Dahong Qian, Biao Li, Sheng Chen, Min Zhang
- [15]. Less is More: Learning from Synthetic Data with Fine-grained Attributes for Person Re-Identification  
ACM Transactions on Multimedia Computing, Communications and Applications (**ACM TOMM**), 2023. (**IF=5.1**)  
**Suncheng Xiang**, Dahong Qian, Mengyuan Guan, Binjie Yan, Ting Liu, Yuzhuo Fu, Guanjie You
- [16]. Learning from Self-Discrepancy via Multiple Co-teaching for Cross-Domain Person Re-Identification  
Machine Learning (**ML**), 2022. (**Invited Paper, IF=7.5**)  
**Suncheng Xiang**, Yuzhuo Fu, Mengyuan Guan, Ting Liu
- [17]. Multi-level Feature Learning with Attention for Person Re-Identification  
Multimedia Tools and Applications (**MTA**), 2020. (**IF=3.6**)  
**Suncheng Xiang**, Yuzhuo Fu, Hao Chen, Wei Ran, Ting Liu
- [18]. Progressive Learning with Style Transfer for Distant Domain Adaptation  
IET Image Processing (**IET-IPR**), 2020. (**IF=2.373**)  
**Suncheng Xiang**, Yuzhuo Fu, Ting Liu
- [19]. Unsupervised Person Re-Identification by Hierarchical Cluster and Domain Transfer  
Multimedia Tools and Applications (**MTA**), 2020. (**IF=3.6**)  
**Suncheng Xiang**, Yuzhuo Fu, Mingye Xie, Zefang Yu, Ting Liu

## Conference Publications

- [20]. GIST: Improving Parameter Efficient Fine-Tuning via Knowledge Interaction  
ACM International Conference on Multimedia (**ACM MM**), 2024. (**Accept rate~26.2%**)  
Jiacheng Ruan, Jingsheng Gao, Mingye Xie, **Suncheng Xiang**, Zefang Yu, Ting Liu, Yuzhuo Fu, Xiaoye Qu
- [21]. Oceanship: A Large-Scale Dataset for Underwater Audio Target Recognition  
International Conference On Intelligent Computing (**ICIC**), 2024. (**Oral**)  
Zeyu Li, **Suncheng Xiang**, Tong Yu, Jingsheng Gao, Jiacheng Ruan, Yanping Hu, Ting Liu, Yuzhuo Fu
- [22]. iDAT: inverse Distillation Adapter-Tuning  
IEEE International Conference on Multimedia and Expo (**ICME**), 2024. (**Oral**)  
Jiacheng Ruan, Jingsheng Gao, Mingye Xie, Daize Dong, **Suncheng Xiang**, Ting Liu, Yuzhuo Fu
- [23]. Enhancing Nasopharyngeal Carcinoma Classification Based on Multi-View Cross-Modal Knowledge Distillation  
IEEE International Symposium on Biomedical Imaging (**ISBI**), 2024.  
Zhengjie Zhang, Crystal Cai, Sijia Du, **Suncheng Xiang**, Dahong Qian

- [24]. VT-ReID: Learning Discriminative Visual-Text Representation for Polyp Re-Identification  
IEEE International Conference on Acoustics, Speech and Signal Processing (**ICASSP**), 2024.  
(**Accept rate~45%, Oral**)  
**Suncheng Xiang**<sup>✉</sup>, Cang Liu, Jiacheng Ruan, Shilun Cai, Sijia Du, Dahong Qian
- [25]. LAMM: Label Alignment for Multi-Modal Prompt Learning  
Thirty-Eighth AAAI Conference on Artificial Intelligence (**AAAI**), 2024. (**Accept rate~23.75%**)  
Jingsheng Gao, Jiacheng Ruan, **Suncheng Xiang**, Zefang Yu, Ke Ji, Mingye Xie, Ting Liu, Yuzhuo Fu
- [26]. MEW-UNet: Multi-axis Representation Learning in Frequency Domain for Medical Image Segmentation  
International Conference on Medical Image Computing and Computer Assisted Intervention Workshop (MLMI), 2023.  
Jiacheng Ruan, Mingye Xie, **Suncheng Xiang**<sup>✉</sup>, Ting Liu, Yuzhuo Fu<sup>✉</sup>
- [27]. SAE-NTM: Sentence-Aware Encoder for Neural Topic Modeling  
4th Workshop on Computational Approaches to Discourse (**CODI**), 2023.  
Hao Liu, Jingsheng Gao, **Suncheng Xiang**, Ting Liu, Yuzhuo Fu
- [28]. CluCDD: Contrastive Dialogue Disentanglement via Clustering  
IEEE International Conference on Acoustics, Speech and Signal Processing Satellite Workshop (**IWCIM**), 2023.  
Jingsheng Gao, Zeyu Li, **Suncheng Xiang**, Ting Liu, Yuzhuo Fu
- [29]. Colo-SCRL: Self-Supervised Contrastive Representation Learning for Colonoscopic Video Retrieval  
IEEE International Conference on Multimedia and Expo (**ICME**), 2023. (**Oral**)  
Qingzhong Chen, Shilun Cai, Crystal Cai, Zefang Yu, Dahong Qian<sup>✉</sup>, **Suncheng Xiang**<sup>✉</sup>
- [30]. AutoKary2022: A Large-Scale Densely Annotated Dataset for Chromosome Instance Segmentation  
IEEE International Conference on Multimedia and Expo (**ICME**), 2023.  
Dan You, Pengcheng Xia, Qiuzhu Chen, Minghui Wu, **Suncheng Xiang**<sup>✉</sup>, Jun Wang<sup>✉</sup>
- [31]. AV-TAD: Audio-Visual Temporal Action Detection with Transformer  
IEEE International Conference on Acoustics, Speech and Signal Processing (**ICASSP**), 2023.  
(**Accept rate~40+%, Oral**)  
Yangcheng Li, Zefang Yu, **Suncheng Xiang**, Ting Liu, Yuzhuo Fu
- [32]. MTDL-Net: Morphological and Temporal Discriminative Learning for Heartbeat Classification  
IEEE International Conference on Acoustics, Speech and Signal Processing (**ICASSP**), 2023.  
(**Accept rate~40+%**)  
Can Han, **Suncheng Xiang**<sup>✉</sup>, Dahong Qian<sup>✉</sup>
- [33]. CC-PoseNet: Towards Human Pose Estimation in Crowded Classrooms  
IEEE International Conference on Acoustics, Speech and Signal Processing (**ICASSP**), 2023.

**(Accept rate~40+%, Oral)**

Zefang Yu, Yanping Hu, **Suncheng Xiang**, Ting Liu, Yuzhuo Fu

- [34]. MALUNet: A Muti-Attention and Light-weight UNet for Skin Lesion Segmentation  
International Conference on Bioinformatics and Biomedicine (**BIBM**), 2022. **(Accept rate~19.8%)**  
Jiacheng Ruan, **Suncheng Xiang**✉, Mingye Xie, Ting Liu, Yuzhuo Fu✉
- [35]. CDTnet: Cross-Domain Transformer based on Attributes for Person Re-Identification  
IEEE International Conference on Multimedia and Expo Workshops (**ICMEW**), 2022.  
Mengyuan Guan, **Suncheng Xiang**, Ting Liu, Yuzhuo Fu
- [36]. Rethinking Illumination for Person Re-Identification: A Unified View  
IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (**CVPRW**),  
2022.  
**Suncheng Xiang**, Guanjie You, Leqi Li, Mengyuan Guan, Ting Liu, Dahong Qian, Yuzhuo Fu
- [37]. Spatial Attention Guided Local Facial Attribute Editing  
IEEE International Conference on Multimedia and Expo (**ICME**), 2022. **(Accept rate~29%)**  
Mingye Xie, **Suncheng Xiang**, Feng Wang, Ting Liu, Yuzhuo Fu
- [38]. Zero-Shot Learning for Skeleton-based Classroom Action Recognition  
International Symposium on Computer Science and Intelligent Controls (**ISCSIC**), 2021.  
Bin Shi, Luyang Wang, Zefang Yu, **Suncheng Xiang**, Yuzhuo Fu, Ting Liu
- [39]. Learning from Self-Discrepancy via Multiple Co-teaching for Cross-Domain Person Re-Identification  
International Joint Conference on Artificial Intelligence WSRL Workshop (**IJCAIW**), 2021.  
**Suncheng Xiang**, Yuzhuo Fu, Mengyuan Guan, Ting Liu
- [40]. Attention based Facial Expression Manipulation  
IEEE International Conference on Multimedia and Expo Workshops (**ICMEW**), 2021.  
Feng Wang, **Suncheng Xiang**, Ting Liu, Yuzhuo Fu
- [41]. Taking a Closer Look at Synthesis: Fine-grained Attribute Analysis for Person Re-Identification  
IEEE International Conference on Acoustics, Speech and Signal Processing (**ICASSP**), 2021.  
**(Accept rate~48%)**  
**Suncheng Xiang**, Yuzhuo Fu, Guanjie You, Ting Liu
- [42]. Unsupervised Domain Adaptation Through Synthesis for Person Re-Identification  
IEEE International Conference on Multimedia and Expo (**ICME**), 2020. **(Accept rate~29%)**  
**Suncheng Xiang**, Yuzhuo Fu, Guanjie You, Ting Liu
- [43]. Deep Unsupervised Progressive Learning for Distant Domain Adaptation  
IEEE International Conference on Tools with Artificial Intelligence (**ICTAI**), 2019. **(Accept rate~28%,  
Oral)**  
**Suncheng Xiang**, Yuzhuo Fu, Ting Liu
- [44]. Enhancing Model Performance of Person Re-Identification on Unknown Target Domain  
International Conference on Software Engineering and Service Science (**ICSESS**), 2018.  
Rongsen Xu, Yuzhuo Fu, Ting Liu, **Suncheng Xiang**

- [45]. Circuit design and optimization based on EXT, EXTU instruction  
International Conference on Design, Manufacturing and Mechatronics (**ICDMM**), 2016.  
**Suncheng Xiang**, Minxuan Zhang, Zuocheng Xing, Cang Liu
- [46]. QRD Architecture Using the Modified ILMGS Algorithm for MIMO Systems  
International Wireless Internet Conference (**WICON**), 2016.  
Cang Liu, Chuan Tang, Zuocheng Xing, Luechao Yuan, Yu Wang, Lirui Chen, Yang Zhang,  
**Suncheng Xiang**, Wangfeng Zhao, Xing Hu, Jinsong Xu
- [47]. Hardware design of ML algorithm in MIMO-OFDM system  
International Conference on Systems and Informatics (**ICSAI**), 2016.  
**Suncheng Xiang**, Minxuan Zhang, Zuocheng Xing, Cang Liu

## Patents

- [48]. A Method, Equipment and Storage Medium for Re-Identification of Inland Water Vessels Based on Transfer Learning  
National Invention Patent. Patent No: CN202010053647.6  
Yuzhuo Fu, Ting Liu, **Suncheng Xiang**

## Awards

- Meng Minwei International Exchange Fund, SJTU, 2024
- Outstanding Doctoral Graduate, SJTU, 2022
- Leo KoGuan Scholarship, SJTU, 2019 - 2020
- Merit Student, SJTU, 2018-2019
- First-class Academic Scholarship, NUDT, 2016-2017
- Outstanding Student, NUDT, 2015-2016
- Outstanding Student, NUDT, 2014-2015
- Third-class Academic Scholarship, Outstanding League Cadres, CSUST, 2012-2013
- First-class Academic Scholarship, Merit Student, Model Student of Academic Records, CSUST, 2011-2012
- Third-class Academic Scholarship, Excellent League Member, CSUST, 2010-2011

## Projects

- Scientific Research Project of Shanghai Municipal Health Commission, 2023 - 2026
- Youth Project of National Natural Science Foundation of China, 2024 - 2026

- Startup Fund for Young Faculty at SJTU, 2023 - 2025

## **Professional Activities**

### **Journal Review**

- IEEE Transactions on Image Processing
- IEEE Transactions on Medical Imaging
- IEEE Transactions on Intelligent Vehicles
- IEEE Transactions on Multimedia
- CAAI Transactions on Intelligence Technology
- IEEE Journal of Biomedical and Health Informatics
- Pattern Recognition
- Machine Learning
- Defense Technology
- IET Image Processing
- International Journal of Intelligent Systems
- Signal Processing: Image Communication
- Expert Systems with Applications
- Pattern Recognition Letters
- Computer Vision and Image Understanding
- Neurocomputing
- JMIR Medical Informatics
- Franklin Open
- Machine Vision and Applications
- Multimedia Systems
- Pattern Analysis and Applications
- Knowledge-Based Systems
- Multimedia Tools and Applications
- IEEE Access

- Journal of Supercomputing
- IEEE Open Journal of Signal Processing
- Computers, Materials and Continua
- Mathematical Biosciences and Engineering

### **Journal Editorial**

- Associate Editor, Electronics and Signal Processing, since 2024.
- Associate Editor, Open Access Journal of Data Science and Artificial Intelligence, since 2023.
- Associate Editor, International Journal of Architectural Engineering Technology, since 2023.

### **Conference Review**

- CVPR 2024
- MICCAI 2024
- ISBI 2024
- ACM MM 2023-2024
- ICME 2023
- ICASSP 2023-2024
- CECNet 2022
- IWACCE 2022

### **Program Committee**

- Session Chair of ICASSP 2024
- CTMDT
- EACL 2024
- Workshop Chair of CVDL 2024
- ACL 2023
- Session Chair of ICME 2022 (Recognition and Retrieval)
- EMNLP 2022-2023
- ML4CS 2022
- Session Chair of ICTAI 2019



## **Professional Membership**

- Member, IEEE, (2022-)
- Member, ACM, (2023-)
- Student Member, CCF (2018-2021)

## **Skills**

- \* Programming: Python, MATLAB, C/C++
- \* Deep Learning: Pytorch, TensorFlow, Caffe

## **Teaching**

- Artificial Intelligence Interaction Techniques, SJTU (Spring 2023-2024)
- Artificial Intelligence and Medicine, SJTU (Spring 2023-2024)
- Artificial Intelligence and Medicine, SJTU (Spring 2022-2023)
- BioDesign, SJTU (Fall 2022-2023)
- Digital Integrated Circuits, SJTU (Lead TA, Fall 2020-2021)
- Operating System, SJTU (Lead TA, Fall 2018-2019)
- Digital Integrated Circuits, SJTU (Lead TA, Spring 2017-2018)
- Fundamentals of College Computer, NUDT (Lead TA, Fall 2015-2016)

## **Invited Talks**

- 2024.06: Multimodal Cognitive Learning Based on Generative Artificial Intelligence, Shanghai Theatre Academy
- 2023.11: The 6th WLA Forum, Shanghai
- 2023.08: Summer Top Science Exploration Camp for "Future Scientists" Training Program, Shanghai
- 2023.03: T-Workshop of Science and Technology for the Common Destiny of Mankind, Shanghai
- 2022.04: Pedestrian Data Synthesis and Application Based on Deep Learning, Wuhan University
- 2022.03: Learning from Synthetic Data with Fine-grained Attributes, Fudan University

- 2021.12: Leveraging Synthetic Data for Person Re-Identification, Hunan University
- 2021.12: Learning from Synthetic Data for Person Re-Identification, Donghua University

## **Open Source**

Codes and models for my published papers are available on my GitHub:

<https://github.com/JeremyXSC/>

Last updated: August 10, 2024