## **SUNCHENG XIANG**

### **Assistant Professor**

School of Biomedical Engineering (co-affiliated with) Institute of Medical Robotics Shanghai Jiao Tong University (SJTU)

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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]. BALR-SAM: Boundary-Aware Low-Rank Adaptation of SAM for Resource-Efficient Medical Image Segmentation arXiv preprint arXiv:2509.24204, 2025. Zelin Liu, Sicheng Dong, Bocheng Li, Yixuan Yang, Jiacheng Ruan, Chenxu Zhou, Suncheng Xiang<sup>™</sup>
- [2]. Leveraging MIMIC Datasets for Better Digital Health: A Review on Open Problems, Progress Highlights, and Future Promises arXiv preprint arXiv:2506.12808, 2025. Afifa Khaled, Mohammed Sabir, Rizwan Qureshi, Camillo Maria Caruso, Valerio Guarrasi, Suncheng Xiang, S. Kevin Zhou
- [3]. Deep Multimodal Collaborative Learning for Polyp Re-Identification arXiv preprint arXiv:2408.05914, 2024. **Suncheng Xiang**, Jincheng Li, Zhengjie Zhang, Shilun Cai, Jiale Guan, Dahong Qian

- [4]. 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
- [5]. 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
- [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]. VM-UNet: Vision Mamba UNet for Medical Image Segmentation ACM Transactions on Multimedia Computing, Communications and Applications (**ACM TOMM**), 2025. (Most Cited Paper, IF=5.1)
  Jiacheng Ruan, Jincheng Li, Suncheng Xiang<sup>™</sup>
- [8]. Learning Visual-Semantic Embedding for Generalizable Person Re-identification: A Unified Perspective ACM Transactions on Multimedia Computing, Communications and Applications (ACM TOMM), 2025. (IF=5.1) Suncheng Xiang<sup>™</sup>, Jingsheng Gao, Mingye Xie, Mengyuan Guan, Jiacheng Ruan, Yuzhuo Fu
- [9]. Learning Multi-axis Representation in Frequency Domain for Medical Image Segmentation Machine Learning (ML), 2024. (IF=7.5)

  Jiacheng Ruan, Jingsheng Gao, Mingye Xie, Suncheng Xiang<sup>™</sup>
- [10]. 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.
- [11]. SubFace: Learning with Softmax Approximation for Face Recognition Multimedia Tools and Applications (MTA), 2024. (IF=3.6)
  Suncheng Xiang™, Hongwei Xu, Dahong Qian
- [12]. 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
- [13]. A Simple Normalization Technique Uing 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

- [14]. Rethinking Person Re-Identification via Semantic-Based Pretraining ACM Transactions on Multimedia Computing, Communications and Applications (ACM TOMM), 2023. (IF=5.1) Suncheng Xiang<sup>™</sup>, Dahong Qian, Jingsheng Gao, Zirui Zhang, Ting Liu, Yuzhuo Fu
- [15]. 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
- [16]. Deep Multimodal Representation Learning for Generalizable Person Re-identification Machine Learning (ML), 2023. (IF=7.5) Suncheng Xiang<sup>™</sup>, Hao Chen, Wei Ran, Zefang Yu, Ting Liu, Dahong Qian, Yuzhuo Fu
- [17]. 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
- [18]. 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<sup>™</sup>, Dahong Qian, Mengyuan Guan, Binjie Yan, Ting Liu, Yuzhuo Fu, Guanjie You
- [19]. 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<sup>™</sup>, Yuzhuo Fu, Mengyuan Guan, Ting Liu
- [20]. 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
- [21]. Progressive Learning with Style Transfer for Distant Domain Adaptation IET Image Processing (IET-IPR), 2020. (IF=2.373) Suncheng Xiang, Yuzhuo Fu, Ting Liu
- [22]. 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**

[23]. Visual Encoders for Generalized Chromosome Recognition International Conference on Image Processing (ICIP), 2025.
Ruijia Chang, Tao Zhou, Suncheng Xiang, Yujia Wang, Kui Su, Yin Zhou, Dahong Qian, Jun Wang

- [24]. Bridging the Gap: Balancing Human Perception and Detector Attention in Adversarial Attacks IEEE International Conference on Multimedia and Expo (ICME), 2025.

  Mingye Xie, Suncheng Xiang, Xian Gao, Ting Liu, Yuzhuo Fu
- [25]. A Training-Free Correlation-Weighted Model for Zero-/Few-Shot Industrial Anomaly Detection with Retrieval Augmentation IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2025. Wei Ran, Zefang Yu, Suncheng Xiang, Ting Liu, Yuzhuo Fu
- [26]. GPA: Enhancing Generalizable Physical Adversarial Attacks Across Multiple Vision Tasks IEEE International Conference on Acoustics, Speech and Signal Processing (**ICASSP**), 2025. Mingye Xie, **Suncheng Xiang**, Jiacheng Ruan, Xian Gao, Zefang Yu, Ting Liu, Yuzhuo Fu
- [27]. TTE: Two Tokens are Enough to Improve Parameter-Efficient Tuning Thirty-Ninth AAAI Conference on Artificial Intelligence (AAAI), 2025. (Accept rate~23.4%) Jiacheng Ruan, Mingye Xie, Jingsheng Gao, Xian Gao, Suncheng Xiang, Ting Liu, Yuzhuo Fu
- [28]. 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
- [29]. 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
- [30]. 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
- [31]. 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
- [32]. 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
- [33]. 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

- [34]. 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
- [35]. 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
- [36]. 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>
- [37]. AutoKary2022: A Large-Scale Densely Annotated Dateset 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>
- [38]. 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
- [39]. 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>
- [40]. 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
- [41]. 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**<sup>⊠</sup>, Mingye Xie, Ting Liu, Yuzhuo Fu<sup>⊠</sup>
- [42]. 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
- [43]. 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

- [44]. 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
- [45]. 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
- [46]. 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
- [47]. Attention based Facial Expression Manipulation IEEE International Conference on Multimedia and Expo Workshops (ICMEW), 2021. Feng Wang, Suncheng Xiang, Ting Liu, Yuzhuo Fu
- [48]. 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
- [49]. 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
- [50]. 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
- [51]. Enhancing Model Performance of Person Re-Indentification on Unknown Target Domain International Conference on Software Engineering and Service Science (ICSESS), 2018. Rongsen Xu, Yuzhuo Fu, Ting Liu, Suncheng Xiang
- [52]. 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
- [53]. 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
- [54]. 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 & Monographs

[55]. 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** 

- [56]. Reusable Implantable Drive Mechanism Device National Invention Patent. Patent No: CN202311730617.4 Ding Han, Dahong Qian, Guozheng Yan, Shuai Kuang, Suncheng Xiang, et al.
- [57]. Artificial Intelligence Applications in Medicine Shanghai Scientific and Technical Publishers (978-7-5478-7003-7) Dahong Qian, Suncheng Xiang, et al.

## **Awards**

- Third Prize Award in Young Teachers' Teaching Competition, SJTU, 2025
- Third Prize Award in Young Teachers' Teaching Competition, SJTU, 2024
- 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**

- Special Fund for "AI + Education" in SJTU, 2024 2025
- Scientific Research Project of Shanghai Municipal Health Commission, 2023 2026
- Youth Project of National Natural Science Foundation of China, 2024 2026
- Meng Minwei International Exchange Fund, 2024 2025

Startup Fund for Young Faculty at SJTU, 2023 - 2025

# **Professional Activities**

#### Journal Review

- IEEE Transactions on Image Processing
- IEEE Transactions on Medical Imaging (Distinguished Reviewer)
- IEEE Transactions on Intelligent Vehicles
- IEEE Transactions on Multimedia
- IEEE Transactions on Neural Networks and Learning Systems
- IEEE Transactions on Circuits and Systems for Video Technology
- IEEE Transactions on Information Forensics and Security
- CAAI Transactions on Intelligence Technology
- ACM Transactions on Multimedia Computing, Communications and Applications
- IEEE Journal of Biomedical and Health Informatics
- Information Processing and Management
- Pattern Recognition
- Machine Learning
- Information Fusion
- 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
- Artificial Intelligence In Medicine
- Biomedical Signal Processing and Control
- Applied Intelligence
- Journal of Imaging
- Data in Brief
- Journal of Electronic Imaging
- Journal of Supercomputing
- IEEE Open Journal of Signal Processing
- Computers, Materials and Continua
- Mathematical Biosciences and Engineering
- Computer Methods and Programs in Biomedicine
- Biomedicines
- Image and Vision Computing
- Results in Engineering
- Scientific Reports
- Journal of Imaging Informatics in Medicine

#### Journal Editorial

- Guest Editor, Advances in Differential Equations and Control Processes, since 2025.
- Associate Editor, Intelligent Manufacturing, since 2024.
- Associate Editor, Biomedical Engineering Communications, since 2024.
- 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 2024-2026
- ICCV 2025
- ACM MM 2023-2025
- NeurlPS 2025
- AAAI 2026
- MICCAI 2024
- ISBI 2024-2025
- IJCNN 2025
- ICRA 2025
- ICME 2023-2025
- ICASSP 2023-2026
- CECNet 2022
- IWACCE 2022

### **Program Committee**

- Area Chair of NeurIPS 2025
- Session Chair of ACML 2024
- Session Chair of ICASSP 2024
- CTMDT 2024-2028
- EACL 2024
- Workshop Chair of CVDL 2024
- ACL 2023
- Session Chair of ICME 2022 (Recognition and Retrieval)
- EMNLP 2022-2025
- ML4CS 2022

Session Chair of ICTAI 2019

### **Professional Membership**

- Member, CCF-CV, (2025-)
- 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 and Medicine, SJTU (Spring 2024-2025)
- Medical Imaging Intelligence Technology, SJTU (Spring 2024-2026)
- 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**

- 2025.05: Generative Artificial Intelligence and Multimodal Learning: Ushering in a New Era of Innovation, Shanghai Jiao Tong University
- 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: October 09, 2025