

张柘 (Zhe Zhang)

院长, 研究员, 博士生导师, IEEE Senior Member
国家“海外优青”
中科院“百人计划”, 江苏省“双创人才”, 苏州市“姑苏领军人才”
Professor, Ph.D. Supervisor

SEX: 男 (M)
DOB: 01/31/1988
OFFICE (SUZHOU): Room B203-12, Lab 22
Suzhou Aerospace Information Research Institute
158 Dushuhu Ave, Suzhou Industrial Park, Suzhou, Jiangsu 215000, China
OFFICE (BEIJING): Room 342, Main Bldg, Lab 1
Aerospace Information Research Institute, Chinese Academy of Sciences
19 West Beisihuan Road, Haidian District, Beijing 100190, China
OFFICE (JINAN): Room 5402, Teaching Bldg #5, School of Electronics Information
Aerospace Information Technology University
2 Daxue Road, Zhangqiu District, Jinan, Shandong 250200, China
TEL: +86-512-69836908; +86-13466717625; +1-(202)531-7210
EMAIL: zhangzhe01@aircas.ac.cn
HOMEPAGE: UCAS Homepage.
AIRCAS Homepage.

Working Experience (工作经历)

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| 2025.08- | Dean (院长) |
| 2025.08- | Professor (教授), Ph.D Supervisor (博士生导师) |
| | School of Electronics Information, Aerospace Information Technology University |
| | 空天信息大学, 电子信息学院, Jinan, Shandong 250200, China |
| | 研究方向: 稀疏信号处理, 稀疏微波成像, 合成孔径雷达, 三维成像, 深度学习与信号处理的结合, 机器学习. |
| 2023.01- | Lab Vice Director (副主任), Academic Leader (学术带头人) |
| 2022.04- | Professor (研究员), Ph.D Supervisor (博士生导师) |
| 2021.01–2022.04 | Associate Professor (副研究员, “百人计划”创新研究员), 硕士生导师 |
| | Aerospace Information Research Institute, CAS |
| | 中国科学院空天信息创新研究院, Beijing 100190, China |
| | National Key Laboratory of Microwave Imaging |
| | 微波成像全国重点实验室, Beijing 100190, China |
| | Suzhou Aerospace Information Research Institute |
| | 苏州空天信息研究院, Suzhou, Jiangsu 215000, China |
| | Suzhou Key Laboratory of Microwave Imaging, Processing and Application Technology |
| | 苏州市微波成像处理及应用技术重点实验室, Suzhou, Jiangsu 215000, China |
| | 研究方向: 稀疏信号处理, 稀疏微波成像, 合成孔径雷达, 三维成像, 深度学习与信号处理的结合, 机器学习. |

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| 2023.10- | Double Employed Professor (双聘教授) University of Chinese Academy of Sciences 中国科学院大学, Beijing 100190, China |
| 2023.09- | Adjunct Professor (兼职教授) Qian Xuesen Honors College, Xi'an Jiaotong University 西安交通大学, 钱学森学院, Xi'an, Shaanxi 710049, China |
| 2024.10- | Adjunct Professor (兼职教授) Harbin Engineering University 哈尔滨工程大学, Harbin, Heilongjiang, China |
| 2025.05- | Adjunct Professor (兼职教授) Beijing University of Posts and Telecommunications 北京邮电大学, Beijing, China |
| 2016.12–2020.06 | Post-Doctoral Research Fellow (博士后研究员) George Mason University , Fairfax, VA 22030, USA Advisor: Tian, Zhi (田智), Professor, IEEE Fellow 研究方向: 稀疏信号处理, 原子范数优化, 深度学习与信号处理的结合. |
| 2015.12–2016.11 | Post-Doctoral Research Scientist (博士后研究员) George Washington University , Washington, DC 20052, USA Advisor: Tian, Zhi (田智), Professor, IEEE Fellow Cheng, Xiuzhen (成秀珍), Professor, IEEE Fellow 研究方向: 稀疏信号处理, 原子范数优化. |

Education (教育经历)

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| 2009.09–2015.07 | Ph.D. (工学博士) / 信号与信息处理 Institute of Electronics, Chinese Academy of Sciences University of Chinese Academy of Sciences 中国科学院电子学研究所 / 中国科学院大学, Beijing 100190, China Supervisor: 吴一戎, 中国科学院院士, 研究员 研究方向: 稀疏微波成像, 稀疏信号处理, 合成孔径雷达. |
| 2014.01–2014.04 | VISITING STUDENT (访问学生) University of Connecticut , Storrs, CT 06269, USA Supervisor: Zhou, Shengli (周胜利), Professor, IEEE Fellow. |
| 2004.09–2008.07 | B. ENG. (工学学士) / 信息工程 School of Electronics and Information Engineering 电子与信息工程学院 |
| 2003.09–2004.07 | SPECIAL CLASS FOR GIFTED YOUNG (少年班) Xi'an Jiaotong University 西安交通大学, Xi'an, Shaanxi 710049, China. |

Research Projects (研究项目)

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| 2023.12- | 多波束星载高分宽幅 SAR 系统技术 , 2535 万元 资助: 国家重点研发计划, #2023YFB3904900 项目主持人 (首席科学家). |
| 2023.1- | 稀疏信号处理及其在微波成像中的应用研究 , 300 万元 资助: 国家自然科学基金 (NSFC) 优秀青年科学基金 (海外) 项目主持人. |
| 2024.9- | 基于昇腾底座的多模态遥感大数据智能平台技术研发及其应用 , 500 万元 资助: 江苏省前沿技术研发计划项目, #BF2024027 项目主持人. |
| 2021.1–2023.12 | 稀疏信号处理与深度学习及其在微波成像中的应用 , 400 万元 资助: 中国科学院“百人计划” 项目主持人. |
| 2022.1- | 微波三维成像的高效感知系统与技术的研发 , 50 万元 资助: 苏州市科技发展项目, #ZXL2022381 项目主持人. |
| 2023.1- | 基于稀疏信号处理与微波视觉理论的微波三维成像雷达系统 , 50 万元 资助: 江苏省“双创人才”, #JSSCRC2022467 项目负责人. |
| 2023.1- | 智能边端系统算力评估与协同部署研究 , 200 万元 资助: KJW * * * * 协同创新中心课题 课题负责人. |
| 2023.1- | * * * * * SAR 成像处理与信息提取 , 200 万元 资助: 中国科学院* * * * * 重点部署项目 课题负责人. |
| 2021.7- | 结构信号的自适应高效感知理论及在微波成像中的应用 , 130 万元 资助: 中科院空天院前沿科学与颠覆性先导专项 项目主持人. |
| 2023.1- | * * * * * 星载 SAR 系统技术 , 8500 万元 资助: KJW * * * * 创新特区重点项目 项目核心参与人, 处理系统负责人. |
| 2023.1- | 街角盲区建筑布局重建机理与方法 , 500 万元 资助: KJW * * * * 基础加强课题 子课题负责人. |
| 2020.1- | 合成孔径雷达微波视觉三维成像理论与应用基础研究 , 2000 万元 资助: 国家自然科学基金 (NSFC) 重大项目, #61991421, 61991420 子课题负责人. |

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| 2018.8–2018.11 | A Gated LFM-CW TDMA MIMO SAR based Hidden Chamber Detector , 15 万美元 资助: <i>USSOCOM SBIR</i> , #S173-004-0118 信号处理及仿真负责人. |
| 2015.12–2020.6 | Task-Cognizant Sparse Sensing for Inference , 40 万美元 资助: <i>National Science Foundation (NSF) Standard Grant</i> , #1527396 参与. |
| 2010.04–2015.07 | 稀疏微波成像的理论、体制和方法研究 , 3300 万元 资助: 国家重大基础科学研究计划 (973 计划), #2010CB731900 机载部分负责人. |
| 2012.04–2015.07 | 先进微波探测与信息处理 , 430 万元 资助: 中国科学院 / 国家外国专家局 “创新团队” 合作伙伴计划 核心参与人. |

Honors (荣誉)

- 2025.09 | 全国高校第四批“黄大年式教师团队”成员 / 教育部
- 2024.09 | 江苏省首席科技传播专家 / 江苏省科协
- 2024.11 | Wiley 威立中国高贡献作者 (Wiley China Excellent Author Program) / Wiley
- 2022.01 | 国家优秀青年基金 (海外) / 国家自然科学基金委员会 (NSFC)
- 2021.01 | 中国科学院“百人计划” / 中国科学院
- 2021.12 | 苏州市“姑苏领军人才” / 苏州市
- 2022.12 | 江苏省“双创人才” / 江苏省
- 2022 | 中国科学院“青年交叉团队”成员 / 中国科学院

Awards (获奖)

- 2022.03 | 全国颠覆性技术创新大赛 / 中华人民共和国科技部
总决赛优秀奖
- 2021.12 | 优胜奖
- 2021.12 | 优秀奖
- 2008.04 | 德州仪器 (TI) DSP 大奖赛 / Texas Instruments
优胜奖
- | 美国大学生数学建模竞赛 / COMAP

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| 2008.02 | Meritorious (一等奖) |
| 2007.02 | Honorable Mentioned (二等奖) |
| 2006.09 | 中国大学生数学建模竞赛 / 中国工业与应用数学学会 (CSIAM) 二等奖 |

Services (学术服务)

Professional Society Membership and Services (学术组织与服务)

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| 2021.07- | Xi'an Jiaotong-Liverpool University (西交利物浦大学) | |
| 2021.11- | External Mentor (校外导师) | |
| 2021.11- | Pilotage Mentor (领航导师) | |
| 2024.01- | IEEE | |
| 2024.01- | Senior Member | |
| 2016.01-2024.01 | Member | |
| 2010.01-2015.12 | Student Member | |
| 2024.06- | CSIG (中国图象图形学学会) 微波智能成像专业委员会 (筹) | |
| 2024.06- | 专委会委员 | |
| 2024.06- | CNC-ISDE (国际数字地球学会中国国家委员会) 微波对地观测专业委员会 | |
| 2024.06- | 专委会委员 | |
| 2025.05- | CIC (中国通信学会) | |
| 2025.05- | Senior Member (高级会员) | |
| 2025.05- | 空天地融合通信网络专业委员会 | |
| 2025.05- | 专委会委员 | |
| 2024.11- | 苏州市青年科技工作者协会 | |
| 2024.11- | 理事 | |
| 2021.04- | CIE (中国电子学会) | |
| 2021.04- | Member (会员) | |
| 2020.11- | JSAAI (江苏省人工智能学会) | |
| 2020.11- | Member (会员) | |

Journal Reviewers (期刊审稿人)

- Transactions on Pattern Analysis and Machine Intelligence Journal, SCI.
- International Journal of Image and Data Fusion Journal, SCI.
- CAAI Transactions on Intelligence Technology Journal, SCI.
- IEEE Transactions on Antennas and Propagation Journal, SCI.
- IEEE Transactions on Image Processing Journal, SCI.

- *IEEE Transactions on Aerospace and Electronic Systems* Journal, SCI.
- *Journal of Electromagnetic Engineering and Science* Journal, SCI.
- *IEEE Internet of Things Journal* Journal, SCI.
- *Remote Sensing Letters* Journal, SCI.
- *International Journal of Remote Sensing* Journal, SCI.
- *IEEE Transactions on Industrial Informatics* Journal, SCI.
- *IEEE Transactions on Signal Processing* Journal, SCI.
- *IEEE Signal Processing Letters* Journal, SCI.
- *IEEE Open Journal of Signal Processing* Journal, SCI.
- *IEEE Journal of Selected Topics in Signal Processing* Journal, SCI.
- *Signal Processing* Journal, SCI.
- *National Science Open* Journal, SCI.
- *IEEE Transactions on Geoscience and Remote Sensing* Journal, SCI.
- *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* Journal, SCI.
- *IEEE Geoscience and Remote Sensing Letters* Journal, SCI.
- *IEEE Transactions on Industrial Electronics* Journal, SCI.
- *IEEE Sensors Journal* Journal, SCI.
- *IET Radar, Sonar & Navigation* Journal, SCI.
- *IET Electronics Letters* Journal, SCI.
- *IET Signal Processing* Journal, SCI.
- *Remote Sensing* Journal, SCI.
- *Science China Information Science* Journal, SCI.
- *Cogent Engineering* Journal, SCI.
- *Geo-spatial Information Science* Journal, SCI.
- *International Journal of Microwave and Wireless Technologies* Journal, SCI.
- *IEEE Access* Journal, SCI.
- *Tsinghua Science and Technology* Journal, SCI.
- *IEEE Transactions on Circuits and Systems for Video Technology* Journal, SCI.
- *IEEE Wireless Communications Letters* Journal, SCI.
- *Journal of Communications and Networks* Journal, SCI.
- *IEEE Transactions on Computational Imaging* Journal, SCI.

- 雷达学报 Journal, EI.

Vice President of Organizing Committee Member (学术会议组委会副主席)

- 第五届全国雷达对地观测大会 (REOS 2025), Suzhou, China, May 23-25, 2025.

Organizing Committee Member and Technical Program Chair (学术会议组委会成员及学术主席)

- 2022 International Workshop on Microwave Vision and 3D SAR Imaging (MiViSAR 2022), Suzhou, China, Oct 17-19, 2022.

Session Chair (学术会议分会场主席)

- 2023 IET International Radar Conference, Chongqing, China, Dec 3-5, 2023.
- 2024 PhotonIcs and Electromagnetics Research Symposium (PIERS), Chengdu, China, Apr 21-25, 2024.
- 2024 IEEE International Conference on Signal, Information and Data Processing (IC-SIDP), Zhuhai, China, Nov 22-24, 2024.

TPC Member / Reviewer (学术会议学术委员会成员 / 审稿人)

2026 | PIERS 2026, ICC 2026.

2025 | MWI 2025, EECSI 2025, iSemantic 2025, ISPA 2025, RAFC 2025.

2024 | PIERS 2024, ICC 2024, CoSeRa 2024, EECSI 2024, Globecom2024, IJEECS 2024, EEET 2024, ICSIDP 2024, AIT 2024.

2023 | EECSI 2023, iSemantic 2023, Globecom 2023, SIRS 2023, IJCDS 2023, IJEECS 2023, IET Radar 2023.

2022 | EEET 2022, EECSI 2022, IJCDS, IJECE 2021-22, FSDM 2022.

2021 | IJEECS 2021, BEEI 2020-21, ICITech 2021, FSDM 2021, TELKOMNIKA 2021.

2020 | CITEI 2020, SIRS 2020, FSDM 2020.

2019 | SIRS 2019, DISP 2019

2018 | CoSeRa 2018, SIRS 2018, EECSI 2018, ICW-TELKOMNIKA 2018, FSDM 2018.

2017 | ICITech 2017, EECSI 2017, SIRS 2017, FSDM 2017.

2016 | CoSeRa 2016.

2015 | CoSeRa 2015, ISSPIT 2015, ICSPDM 2015.

Professional Skills (专业技能)

专业方向: 深度学习/AI, 机器学习与信号处理方法的结合, 稀疏信号处理与低秩优化, 合成孔径雷达.

专业技能: 大型在线社区开发、运营与维护, Linux 运维, GNU 工具链, L^AT_EX.
MATLAB, C/C++/Python/JavaScript.

Languages (语言)

ENGLISH: Professional (Reside in US for 5 years, CET-6/PETS-5/WSK pass, TOEFL 96)

JAPANESE: Fair

Hobbies (兴趣)

IT, 开源, 编程, Linux, 数码, 互联网.

音乐, 动漫, 历史, 常旅客.

Open Source Projects and Services (主持开源项目)

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| 2006.04–2015.11 | <p>兵马俑 BBS (http://bbs.xjtu.edu.cn/, http://bmybbs.com/) Host: https://github.com/bmybbs?type=source <i>Technical Leader</i></p> <p>兵马俑 BBS 是中国教育网最大的 BBS 站点之一, 属于西安交通大学. 兵马俑 BBS 服务 50000 多名用户, 同时在线数最高 5000. 项目代码超过 10 万行.</p> |
| 2010.06–2019.04 | <p>科苑星空 BBS (http://bbs.ucas.ac.cn/, http://kyxk.net/) <i>Technical Leader</i></p> <p>科苑星空 BBS 是中国科学院的官方社区. 科苑星空 BBS 服务 30000 多名用户, 同时在线数最高 1500. 项目代码超过 12 万行.</p> |
| 2018.09– | <p>hCNN (https://github.com/pzhg/hCNN) <i>Principle Developer</i></p> <p>hCNN 是一个开源的、深度学习与信号处理结合的开发框架, 可方便的进行深度学习开发与训练, 并与传统信号处理方法兼容.</p> |

Publications (Bold for Corresponding / First Authorship)

JOURNAL ARTICLES

1. 许文嘉, 于睿卿, 薛铭浩, 汪雪怡, 张源奔, 魏智威, 张柘, 彭木根, and 吴一戎, “多模态对地观测大模型：架构、关键技术和未来展望,” 雷达学报, vol. 15, no. 1, pp. 361–366, 2026.
2. Z. Ma, X. Ye, Z. Zhang*, B. Zhang, and X. Qiu, “PTIR-Net: A Joint Optimization Network of Pulse Transmission and Sparse Reconstruction for Azimuth Multichannel SAR System,” IEEE Geosci. Remote Sens. Lett., vol. 23, pp. 1–5, 2026, doi: 10.1109/LGRS.2025.3645604.

3. Y. Huang, W. Tie*, Z. Zhang, H. Li, and D. Lu, “Hierarchical Framework for Remote Sensing Deep Learning Evaluation on Terminal Devices,” IEEE J. Sel. Top. Appl. Earth Obs. Remote Sens., vol. 18, pp. 28920–28938, 2025, doi: 10.1109/JSTARS.2025.3629641.
4. Z. Ma, Z. Zhang*, B. Zhang, and X. Qiu, “PUSIF-DUNet: Deep SAR Imaging Network With Joint Optimization on Learnable Probabilistic Undersampling and Unambiguous Reconstruction,” IEEE J. Sel. Top. Appl. Earth Obs. Remote Sens., vol. 18, pp. 28217–28233, 2025, doi: 10.1109/JSTARS.2025.3625733.
5. 王懿巍, 商明样, and 张柘 *, “一种改进 DBF 方法用于多通道 SAR 非均匀采样重构,”河南科技大学学报, vol. 46, no. 3, pp. 1–10, 2025.
6. 海那尔·哈那提, 张柘, 朱利鲁, and 吴一戎 *, “基于区块链的多模态遥感大数据治理方法与系统,” 河南科技大学学报, vol. 46, no. 2, pp. 1–11, 2025, doi: 10.15926/j.cnki.issn1672-6871.2025.02.001.
7. C. Wang, Q. Yan, X. Qiu, Y. Luo, L. Peng, and Z. Zhang, “A Geometric Semantic Enhanced TomoSAR Reconstruction Algorithm in an Urban Area: Analysis and Application,” J. Remote Sens., vol. 5, Jan. 2025, doi: 10.34133/remotesensing.0583.
8. Z. Jin, Z. Pan, Z. Zhang*, and X. Qiu, “SAAS-Net: Self-Supervised Sparse Synthetic Aperture Radar Imaging Network with Azimuth Ambiguity Suppression,” Remote Sens., vol. 17, no. 6, p. 1069, Mar. 2025, doi: 10.3390/rs17061069.
9. D. Zhao, Z. Zhang*, D. Lu, X. Qiu, W. Li, H. Li, and Y. Wu, “CV-YOLO: A Complex-Valued Convolutional Neural Network for Oriented Ship Detection in Single-Polarization Single-Look Complex SAR Images,” Remote Sens., vol. 17, no. 8, p. 1478, Apr. 2025, doi: 10.3390/rs17081478.
10. S. Song, X. Qiu*, S. Shangguan, Y. Luo, Z. Li, and Z. Zhang , “A polarization-power-maximum-based 3D imaging method for Ku-band UAV-borne fully-polarimetric array InSAR,” IEEE J. Sel. Top. Appl. Earth Obs. Remote Sens., vol. 18, pp. 10320–10336, 2025, doi: 10.1109/JSTARS.2025.3555662.
11. Z. Wang, Z. Wang, X. Qiu, and Z. Zhang*, “Fine classification of multi-frequency PolSAR images using an adaptive fusion network,” Remote Sens. Lett., vol. 16, no. 5, pp. 461–471, May 2025, doi: 10.1080/2150704X.2025.247084.
12. Y. Huang, H. Li, D. Lu, Z. Zhang, and W. Tie*, “Intelligence Evaluating Computational Power: A Multi-Factor Method,” IEEE Access, vol. 13, pp. 27398–27415, 2025, doi: 10.1109/ACCESS.2025.3538977.
13. D. Wang, D. Lu, J. Zhao, W. Li, H. Li, J. Xu, J. Huang, and Z. Zhang*, “Multiscale Pillars Fusion for 4-D Radar Object Detection With Radar Data Enhancement,” IEEE Sens. J., vol. 25, no. 3, pp. 5102–5115, Feb. 2025, doi: 10.1109/JSEN.2024.3516786.
14. R. Shi, Y. Luo, Z. Zhang, X. Qiu*, and C. Ding, “A Three-Dimensional Imaging Method for Unmanned Aerial Vehicle-Borne SAR Based on Nested Difference Co-Arrays and Azimuth Multi-Snapshots,” Remote Sens., vol. 17, no. 3, p. 516, Feb. 2025, doi: 10.3390/rs17030516.
15. G. Zhou*, Y. Zuo, Z. Zhang, B. Zhang, and Y. Wu, “CR-DEQ-SAR: A Deep Equilibrium Sparse SAR Imaging Method for Compound Regularization,” IEEE J. Sel. Top. Appl. Earth Obs. Remote Sens., vol. 18, pp. 4680–4695, 2025, doi: 10.1109/JSTARS.2025.3533082.

16. M. Shao*, Y. Fan, Y. Zhang, Z. Zhang, J. Zhao, and B. Zhang, “A Novel Gridless Non-Uniform Linear Array Direction of Arrival Estimation Approach Based on the Improved Alternating Descent Conditional Gradient Algorithm for Automotive Radar System,” *Remote Sens.*, vol. 17, no. 2, p. 303, Jan. 2025, doi: 10.3390/RS17020303.
17. P. Jiang, S. Gao, J. Zhao, Z. Zhang*, and B. Zhang, “Gridless DOA Estimation with Extended Array Aperture in Automotive Radar Applications,” *Remote Sens.*, vol. 17, no. 1, p. 33, Dec. 2024, doi: 10.3390/rs17010033.
18. G. Zhou, Z. Zhang*, B. Zhang, and Y. Wu, “An innovative semantically guided SAR imaging and target enhancement method,” *Electron. Lett.*, vol. 60, no. 24, p. e70123, Dec. 2024, doi: 10.1049/ell2.70123.
19. M. Wang, S. Gao, X. Qiu*, and Z. Zhang, “A Novel Phase Error Estimation Method for TomoSAR Imaging Based on Adaptive Momentum Optimizer and Joint Criterion,” *IEEE J. Sel. Top. Appl. Earth Obs. Remote Sens.*, vol. 18, pp. 2042–2051, 2025, doi: 10.1109/JSTARS.2024.3506852.
20. X. Qiu*, Z. Jiao, Z. Zhang, Q. Yan, and C. Ding*, “Advances and prospects in SAR microwave vision three-dimensional imaging,” *Natl. Sci. Open*, vol. 3, no. 5, p. 20240009, Sep. 2024, doi: 10.1360/ns0/20240009.
21. Y. Zhao, D. Xiao, Z. Pan, B. W. K. Ling, Y. Tian, and Z. Zhang*, “Sparse SAR Imaging Based on Non-Local Asymmetric Pixel-Shuffle Blind Spot Network,” *Remote Sens.*, vol. 16, no. 13, p. 2367, Jun. 2024, doi: 10.3390/rs16132367.
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KEYNOTES / INVITED TALKS

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