Xulei YANG

Personal particulars

Contact: yangxulei@gmail.com

Address: 1 Fusionopolis Way, Singapore, 138632.

Research Interest

3D Vision, Generative AI, Medical Imaging, Large Vision Language Model.

Summary

Xulei Yang received the Ph. D. degree from Nanyang Technological University, Singapore. He is currently a Principal Scientist and 3D Vision Group Leader at Institute for Infocomm Research (I^2R), Agency of Science, Technology and Research (A*STAR), Singapore. He has authored/co-authored 100+ prestigious journals/conferences, such as IEEE TNNLS, IEEE TIP, IEEE Networks, IEEE JSAC, CVPR, ECCV, NeurIPS, MICCAI, ICLR, KDD, IJCAI and invented more than 20 patents. He is current a IEEE Senior member and a Kaggle Competition master.

He has been working extensively in the area of 3D vision and medical imaging in both Academic and Industry. He was previously the Research Head of YITU Technology Singapore, with more than 16 years of R&D experience in deep/machine learning for image/data analysis. He is the principal investigator for various research and industrial projects involved in providing deep learning solutions for real-world computer vision and healthcare applications, including the latest awarded SGD10M MTC programmatic 3D Vision project.

Education

Nanyang Technological University, Singapore
Doctor of Philosophy, Electrical and Electronic Engineering, June 2007

Employment History

Institute for Infocomm Research, A*Star

Principal Scientist & Principal Investigator, May 2021 - Present

YITU Tech Singapore

Research Head Oct 2018 - Apr 2021

Institute of High Performance Computing, A*Star

Scientist / Senior Scientist, Jan 2013 - Sep 2018

MIT Semiconductor Singapore

Principal RD Engineer, Team Leader, Mar 2010 - Jan 2013

Zygo Vision Singapore

Principal RD Engineer, Team Leader, Jun 2006 - Oct 2009

Academic Services

- Reviewer: ICML, NeurIPS, ICLR, CVPR, ICCV, AAAI, ACM-MM, ICME, BMVC, WACV and others.

- Reviewer: IEEE TKDE, IEEE TFS, IEEE TIP, IEEE JBHI, Neurocomputing, CVIU, MBEC, and others.
- Organizing Committee: ICME 2025 Special Session, BlockSys 2025, ICNC-FSKD 2024, MIPR 2023, ICDM 2023 Special Session, and others.

Honors & Awards

- Senior IEEE Member, 2013-now
- Kaggle Competition Master, 2017-now
- Kaggle Competitions: 2 gold, 7 sliver, 2 bronze (USD 30K), 2016-2018
- Rakuten-Viki Global TV Recommender Challenge, 1st place (SGD8k), 2015

Selected Publications

- R Li, S Li, L Kong, X Yang, J Liang, SeeGround: See and Ground for Zero-shot Open-Vocabulary 3D Visual Grounding, CVPR 2025
- R Gong, KH Yap, W Liu, X Yang, J Cheng, Rectification-specific Supervision and Constrained Estimator for Online Stereo Rectification, CVPR 2025
- Z Zhang, Y Yu, Y Chen, X Yang, SY Yeo, MedUnifier: Unifying Vision-and-Language Pre-training on Medical Data with Vision Generation Task using Discrete Visual Representations, CVPR 2025
- L. Cai, C.S. Foo, X. Xu, Z. Gu, J. Cheng, X. Yang, Evidential learning-based Certainty Estimation for Robust Dense Feature Matching, ICLR 2025
- X. Yang, C. Cheng, X. Yang, F. Liu, G. Lin, Text-to-Image Rectified Flow as Plug-and-Play Priors, ICLR 2025
- Y. Su, Y. Li, N Liu, K. Jia, X. Yang, C.S. Foo, X. Xun, On the Adversarial Risk of Test Time Adaptation: An Investigation into Realistic Test-Time Data Poisoning, ICLR 2025.
- Z. Cheng, F. Wu, P. Qian, Z. Zhao, X Yang*, AIC3DOD: Advancing Indoor Class-Incremental 3D Object Detection with Point Transformer Architecture and Room Layout Constraints, WACV 2025
- L Orecchia, J Hu, Z Wang, X Yang, M Wu, X Geng, Training Binary Neural Networks via Gaussian Variational Inference and Low-Rank Semidefinite Programming, NeurIPS 2024
- J. Wang, Z. Cheng, P. Qian, N. Zhao, X Yang, On-the-fly Point Feature Representation for Point Clouds Analysis, ACM MM 2024
- Z. Zhao, F. Fang, X. Yang, C. Guan, K. Zhou, See, Predict, Plan: Diffusion for Procedure Planning in Robotic Surgical Videos, MICCAI 2024
- Y. Yang, J. Chen, X. Yang, S. Leng, L. Zhong, J. Rajapakse, Coarse-Grained Mask Regularization for Microvascular Obstruction Identification from Non-Contrast Cine Cardiac MRI, MICCAI 2024
- X. Yang, C. Chen, C. Zhang, X. Yang, F. Liu, G. Lin, Learn to Optimize Denoising Scores: A Unified and Improved Diffusion Prior for 3D Generation, ECCV 2024
- K. Xu, Z. Wang, X. Geng, X. Yang, M. Wu, X. Li, W. Lin, LPViT: Low-Power Semi-structured Pruning for Vision Transformers, ECCV 2024

- R Gong, W Liu, Z Gu, X Yang, J Cheng, Learning Intra-view and Cross-view Geometric Knowledge for Stereo Matching, CVPR 2024.

Awarded Projects

- Lead Principal Investigator, "Towards Realistic Deep Learning for 3D Vision", MTC Programmatic Programme, 10M SGD, 2023-2026.
- Co-Principal Investigator, "Self-aware Continuously Learning Models", AI Singapore Research Programme (AISG), 890K SGD, 2022-2025
- Co-Principal Investigator (Team PI), "A Protein Biophysical Strategy for Discovering and Targeting Key Protein Nodes in Cancer" Competitive Research Programme (CRP), 3.5M SGD, 2020-2024
- Co-Principal Investigator (Team PI), "Intelligent Bioprocessing: Development of a Progressive Deep Machine Learning Framework towards Real-time Prediciton of Biologics Product Glycosylation", SERC Strategic Funds (SSF), 1.5M SGD, 2018-2019
- Principal Investigator, "Auto Graphical Prescription (Grx)", ASTAR-GE Healthcare Collaboration Project, 216K SGD, 2016-2017
- Co-Principal Investigator (Team PI), "High Throughput Tissue-based Screening (HTTS): A Quantitative Approach to Increase Efficiency in Cancer Biomarkers Discovery and Translational Research", Joint Council Office Project Fund (JCO), 960K SGD, 2014-2017
- Co-Principal Investigator (Team PI), "Deep Phenotyping Analysis of the Golgi: Automated In-depth Characterization of Image-based Phenotypes Scaled Up for Genome-wide Analysis of Golgi Regulatory Network", Joint Council Office Project Fund (JCO), 900K SGD, 2013-2016