

Profile

- **Assistant Professor of Computer Science at University of Central Florida.**
- Faculty member of the UCF Institute of Artificial Intelligence (IAI); Joint Appointments: Department of Clinical Sciences, UCF College of Medicine.
- Postdoc at Harvard University and University of Pennsylvania, PhD in computer science from the Australian Institute for Machine Learning (AIML), Adelaide University.

Areas of Interests

- **AI for Medicine, Computer Vision, Medical Imaging, Trustworthy AI, AI for Science**

Professional Experience

5/2025 – **Assistant Professor (Tenure-Track)**, *Department of Computer Science*, University of Central Florida

- Faculty member of the **UCF Institute of Artificial Intelligence (IAI)**
- Joint Appointments: Department of Clinical Sciences, UCF College of Medicine.
- Director of the UCF AI & Imaging in Medicine (AIM) Research Lab

Education/Training

8/2024-5/2025 **Research Fellow**, University of Pennsylvania

- Advised by: Prof. Christos Davatzikos and Prof. MacLean Nasrallah

8/2022-7/2024 **Postdoctoral Research Fellow**, Harvard University

- Advised by: Prof. Mengyu Wang and Prof. Tobias Elze

6/2019-6/2022 **PhD**, *Computer Science*, Australian Institute for Machine Learning, University of Adelaide

- PhD thesis: Anomaly Detection in Computer Vision and Medical Imaging.
- Advised by: Prof. Gustavo Carneiro.
- Awarded University of Adelaide ECMS Research Scholarship

12/2018 **BSc (First-Class Honours)**, *Computer Science*, University of Adelaide, Australia, GPA 7.0/7.0

- Thesis: Deep Learning Approach for Five-class Polyp Detection and Classification
- Completing the four-year bachelor's degree in three years

Research Funding

- Florida Department of Health (FDOH) **Florida Cancer Innovation Fund**

Kidney-VLM: An AI-Driven Diagnostic Platform for Early and Accurate Kidney-Cancer Detection in Florida

Role: **Co-PI**; PI: Pegah Khosravi

Period: **08/01/26 – 07/31/27**; Total funds: **US\$ 974,680.20**

- Florida Department of Health (FDOH) **Florida Cancer Innovation Fund**

MammoChat: An AI-Driven Platform for Personalized Breast Health Support

Role: **Co-I (co-lead AI team)**; PI: Jane Gibson

Period: **09/16/25 – 08/31/26**; Total funds: **US\$ 1,998,935.00**

Publications

- Dr. Yu Tian has authored/co-authored 83 research works, including peer-reviewed papers, preprints, and manuscripts under review, in machine learning, computer vision, and medical AI. His peer-reviewed work spans venues including NeurIPS, ICLR, AAAI, CVPR, ICCV, ECCV, MICCAI, TPAMI, TMI, MedIA, Nature Biomedical Engineering, Science Advances, and npj Digital Medicine. As of 10/2026, his works have been cited **4,875** times, with h-index = **29** [[Google Scholar](#)]. Below are his publications: * indicates equal contribution, ‡ denotes corresponding author.

2027

- 83 Mengrui Yin, Tianxingjian Ding, Wufan Zhao, Ziyang Yan, and **Yu Tian**. RePrior: Measurement-Reconciled Prior Correction for Sparse-View CBCT Reconstruction. *International Conference on Learning Representations (ICLR)*, Under Review, 2027.
- 82 Tianxingjian Ding, Mubarak Shah, and **Yu Tian**. TERRA: Learning Transportable Latent Actions through Temporal Effect Representation and Relational Alignment. *International Conference on Learning Representations (ICLR)*, Under Review, 2027.
- 81 Tianyun Jiang, Wenrui Bao, Bingxin Xu, **Yu Tian**, and Yuzhang Shang. DeltaWAM: Change-Centric Visual Foresight via Delta Tokens for an Efficient World-Action Model. *International Conference on Learning Representations (ICLR)*, Under Review, 2027.
- 80 Abdul Mohaimen Al Radi, Kunyang Li, Yuzhang Shang, Mubarak Shah, and **Yu Tian**. Keep-sake: Selective Spatial Memory for Long-Horizon Video Generation. *International Conference on Learning Representations (ICLR)*, Under Review, 2027.
- 79 Ziwen Kan, Jie Peng, Bo Yan, Davis Hobley, Zheng Zhang, **Yu Tian**, Tianlong Chen, and Song Wang. PatientWM: Towards Generalizable Clinical World Models via Unified Patient States. *International Conference on Learning Representations (ICLR)*, Under Review, 2027.
- 78 Dannong Wang, Yuran Zhang, Bian Sun, Alex Stinard, Yuzhang Shang, Song Wang, and **Yu Tian**. PrivMeSA: Privacy-Aware Self-Evolving Multi-Agent System for Medicine via Local-Remote LLM Collaboration. *International Conference on Learning Representations (ICLR)*, Under Review, 2027.

2026

- 77 Ruizhi Qian, Lei Shi, Tianyu Hu, Bo Yan, Song Wang, and **Yu Tian**. SOMA: Continuous Monitoring and Intervention for System Two Reasoning with System One Models. *Technical report (Arxiv)*, 2026.
- 76 Ahmed Nesar Tahsin Choudhury, Abdul Mohaimen Al Radi, **Yu Tian**, and Md Mosaddek Khan. Search-Tree-Grounded Explanations for Chess. *EACL*, Under Review, 2026.
- 75 Dannong Wang, Jessica Zhang, Chen Chen, Wei Zhang, Song Wang, Yanda Meng, Guru Sonpavde, Craig Horbinski, and **Yu Tian**. A multimodal foundation model linking histopathology and DNA methylation. *npj Precision Oncology*, Under Review, 2026.
- 74 Ziheng Wang, Yan Lin, Wen Chen, Zhen Zhang, Qinkai Yu, Jiliang Ning, Wenrui Zang, Sheng Zhou, Abdullah Hamdi, **Yu Tian**, Yalin Zheng, Deepak P. Edward, Xin Gao, and Yanda Meng. ControlGlaucoma: Explicit Clinical Biomarker-Controllable Scanning Laser Ophthalmoscopy Fundus Image Generation for Glaucoma Diagnosis. *Medical Image Analysis (MedIA)*, Under Review, 2026.
- 73 A’Naja M. Newsome, Zuriel Corporan, Zicheng Jin, and **Yu Tian**. Towards a Framework for Multimodal Digital Phenotyping and Machine Learning for Postpartum Cardiometabolic Risk: Results from a Scoping Review. *Journal of Medical Internet Research (JMIR)*, Under Review, 2026.
- 72 Pegah Khosravi, Tianxingjian Ding, **Yu Tian**, and Michael McDonald. Generative AI and Multimodal Foundation Models for Personalized Surgical Planning and Real-Time Guidance. *Book Chapter in Artificial Intelligence-Driven Robotic Surgery: Foundations, Innovations and Future Directions*, 2026.
- 71 Md Zubair, Hao Zheng, Nussdorf Jonathan, Grayson W Armstrong, Lucy Q Shen, Gabriela Wilson, **Yu Tian**, Xingquan Zhu, and Min Shi. MultiFair: Multimodal Balanced Fairness-Aware Medical Classification with Dual-Level Gradient Modulation. *IEEE Transactions on Medical Imaging (TMI)*, 2026.
- 70 Fidel Omar Tito Cruz, Neda Ghafouri, Zengyan Wang, Pegah Khosravi, **Yu Tian**, and Chen Chen. Longitudinal 3D Foundation Modeling for Neoadjuvant Breast Cancer Response Prediction from Serial DCE-MRI. *Applications of Medical AI Workshop at MICCAI (MICCAI AMAI)*, 2026. **Oral**.
- 69 Yan Luo*, Muhammad Osama Khan*, **Yu Tian***, Min Shi, Zehao Dou, Tobias Elze, Yi Fang, and Mengyu Wang. FairVision: Equitable Deep Learning for Eye Disease Screening via Fair Identity Scaling. *arXiv preprint*, Accepted, 2026.
- 68 Tianyu Han*, Riga Wu*, **Yu Tian**, Firas Khader, Lisa C. Adams, Keno K. Bressem, Christos Davatzikos, Jakob Nikolas Kather, Li Shen, David A. Mankoff, Eduardo Mortani Barbosa Jr, and Daniel Truhn. CLEAR: an auditable foundation model for radiology grounded in clinical concepts. *Nature Biomedical Engineering (Nature BME)*, 2026.

- 67 Hu Wang, Salma Hassan, Yuyuan Liu, Congbo Ma, Yuanhong Chen, Qing Li, Jiahui Geng, Bingjie Wang, **Yu Tian**, Yutong Xie, Jodie Avery, Louise Hull, Ian Reid, Mohammad Yaqub, and Gustavo Carneiro. Meta-Learned Modality-Weighted Knowledge Distillation for Robust Multi-Modal Learning with Missing Data. *Journal of Biomedical and Health Informatics (JBHI)*, Under Review, 2026.
- 66 Yuyuan Liu, Yuanhong Chen, Chong Wang, Junlin Han, Junde Wu, Can Peng, Jingkun Chen, **Yu Tian**†, and Gustavo Carneiro. AuralSAM2: Enabling SAM2 Hear Through Pyramid Audio-Visual Feature Prompting. *IEEE Conference on Computer Vision and Pattern Recognition Findings (CVPR Findings)*, 2026.
- 65 Yifan Shen, Qinghao Zhang, Yuner Zhang, Jiaming Zhou, Houze Yang, Yuhan Wang, Jingyuan Zhu, Onkar Kishor Susladkar, **Yu Tian**, Meihuan Huang, Jintai Chen, and Xu Cao. A Survey on Embodied AI for Pediatrics. *IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW)*, 2026.
- 64 Chong Wang, Fengbei Liu, Yuyuan Liu, Yuanhong Chen, **Yu Tian**, and Leyuan Fang. MedCure: Medical Data Curation for Efficient Vision-Language Pretraining. *IEEE Transactions on Image Processing (TIP)*, 2026.
- 63 Tianxingjian Ding, Yuanhao Zou, Chen Chen, Mubarak Shah, and **Yu Tian**. CLARITY: Medical World Model for Guiding Treatment Decisions by Modeling Context-Aware Disease Trajectories in Latent Space. *European Conference on Computer Vision (ECCV)*, 2026.
- 62 Ahnaf Munir, Dannong Wang, Michael McDonald, Mubarak Shah, Pegah Khosravi, and **Yu Tian**. OncoTriad-QA: A Patient-Level Radiology-Pathology-Genomics Benchmark for Pan-Cancer Reasoning. *Conference on Neural Information Processing Systems (NeurIPS)*, Under Review, 2026.
- 61 Tina Tran, Dharmesh R. Tailor, **Yu Tian**, Mubarak Shah, and Pegah Khosravi. Longitudinal-MedGemma: Learning Discontinuous Temporal Dynamics for Longitudinal Medical Imaging. *Conference on Neural Information Processing Systems (NeurIPS)*, Under Review, 2026.
- 60 Abdul Mohaimen Al Radi, Kunyang Li, Yuzhang Shang, Mubarak Shah, and **Yu Tian**. AeroWorld: Action-Conditioned Aerial Video Generation from Inertial Controls. *Conference on Neural Information Processing Systems (NeurIPS)*, Under Review, 2026.
- 59 Chang Liu, **Yu Tian**, and Rui Xie. Mitigating Object Hallucination in Large Vision-Language Models via False Discovery Controlled Visual Data Splitting. *Conference on Neural Information Processing Systems (NeurIPS)*, Accepted, 2026.
- 58 Chao Wu, Baoheng Li, Mingchen Gao, **Yu Tian**, and Zhenyi Wang. From Efficiency to Adaptivity: A Deeper Look at Adaptive Reasoning in Large Language Models. *arXiv Preprint*, Under Review, 2026.
- 57 Chaoyang Wang, Wenrui Bao, Sicheng Gao, Bingxin Xu, **Yu Tian**, Yogesh S Rawat, Yunhao Ge, and Yuzhang Shang. VLA-Thinker: Boosting Vision-Language-Action Models through Thinking-with-Image Reasoning. *European Conference on Computer Vision (ECCV)*, Under Review, 2026.
- 56 Mehrajul Abadin Miraj, Abdul Mohaimen Al Radi, Shariful Islam Rayhan, Md. Tanvir Alam, Ismat Rahman, **Yu Tian**, and Md Mosaddek Khan. CREST: Curvature-Regulated Event-Centric Sampling for Efficient Long-Video Understanding. *arXiv Preprint*, Under Review, 2026.
- 55 Chongcong Jiang, Tianxingjian Ding, Chuhan Song, Jiachen Tu, Ziyang Yan, Yihua Shao, Zhenyi Wang, Yuzhang Shang, Tianyu Han, and **Yu Tian**. Medical SAM3: A Foundation Model for Universal Prompt-Driven Medical Image Segmentation. *Technical report (Arxiv)*, 2026.
- 54 Mengrui Yin, Chaoyu Dong, Lei Li, Ao Ma, Haozhe Wang, Yihua Shao, **Yu Tian**, and Ziyang Yan. BRGS: Block-based Radiative Gaussian Splatting for Tomographic Reconstruction. *arXiv Preprint*, 2026.
- 53 Dawei Li, Zijian Gu, Peng Wang, Chuhan Song, Zhen Tan, Mohan Zhang, Tianlong Chen, **Yu Tian**, and Song Wang. Fairness in Multi-modal Medical Diagnosis with Demonstration Selection. *Technical report (Arxiv)*, 2026.
- 52 Abdul Mohaimen Al Radi, Xu Cao, Fanyang Yu, Yuyuan Liu, Fengbei Liu, Chong Wang, Yuanhong Chen, Jintai Chen, Chen Chen, Mubarak Shah, Tianyu Han, Christos Davatzikos, MacLean P. Nasrallah, and **Yu Tian**. Agentic large-language-model systems in medicine: A systematic review and taxonomy. *Technical report (Preprint)*, 2026.

2025

- 51 Yan Luo, Muhammad Osama Khan, Congcong Wen, Muhammad Muneeb Afzal, Titus Fidelis Wuermeling, Min Shi, **Yu Tian**, Yi Fang, and Mengyu Wang. FairDiffusion: Enhancing Equity in Latent Diffusion Models via Fair Bayesian Perturbation. *Science Advances*, 2025.
- 50 Minghan Li*, Congcong Wen*, **Yu Tian***, Min Shi, Yan Luo, Hao Huang, Yi Fang, and Mengyu Wang. FairFedMed: Benchmarking Group Fairness in Federated Medical Imaging with FairLoRA. *IEEE Transactions on Medical Imaging (TMI)*, 2025.
- 49 Anthony Bilic, Guangyu Sun, Ming Li, Md Sanzid Bin Hossain, **Yu Tian**, Wei Zhang, Laura Brattain, Dexter Hadley, and Chen Chen. Fourier Transform Multiple Instance Learning for Whole Slide Image Classification. *Journal of Medical Imaging (JMI)*, 2025.
- 48 Min Shi, Muhammad Muneeb Afzal, Hao Huang, Congcong Wen, Yan Luo, Muhammad Osama Khan, **Yu Tian**, Leo Kim, Yi Fang, and Mengyu Wang. Equitable deep learning for diabetic retinopathy detection using multi-dimensional retinal imaging with fair adaptive scaling: a retrospective study. *Translational Vision Science & Technology (TVST Cover Article)*, 2025. **Cover Article**.
- 47 Saber Kazeminasab, Sayuri Sekimitsu, Mojtaba Fazli, Mohammad Eslami, Min Shi, **Yu Tian**, Yan Luo, Mengyu Wang, Tobias Elze, and Nazlee Zebardast. An Artificial Intelligence Method for Phenotyping of OCT-Derived Thickness Maps Using Unsupervised and Self-supervised Deep Learning. *Journal of Imaging Informatics in Medicine (JIIM)*, 2025.
- 46 McCalla Aliah, Mengyu Wang, Mohammad Eslami, Saber Kazeminasab, Yan Luo, Hannah Rana, Sajib Saha, Min Shi, **Yu Tian**, Nazlee Zebardast, and Tobias Elze. Association Between Cup-to-Disc Ratio and Structural and Functional Damage Parameters in Glaucoma: Insights From Multiparametric Modeling. *Translational Vision Science & Technology (TVST)*, 2025.
- 45 Milad Masroor, Tahir Hassan, **Yu Tian**, Kevin Wells, David Rosewarne, Thanh-Toan Do, and Gustavo Carneiro. Fair Distillation: Teaching Fairness from Biased Teachers in Medical Imaging. *Journal of Biomedical and Health Informatics (JBHI)*, Under Review, 2025.
- 44 Chengzhi Liu, Zile Huang, Zhe Chen, Feilong Tang, **Yu Tian**, Zhongxing Xu, Zihong Luo, Yalin Zheng, and Yanda Meng. Incomplete Modality Disentangled Representation for Ophthalmic Disease Grading and Diagnosis. *The 39th Annual AAAI Conference on Artificial Intelligence (AAAI Oral)*, 2025. **Oral**.
- 43 Ziheng Wang*, Shuran Yang*, Wen Chen, Zhen Zhang, Mengyu Wang, Feixiang Zhou, **Yu Tian**, Meng Wang, Yitian Zhao, Yalin Zheng, and Yanda Meng. Fairness-Aware vCDR-Controlled Generation for Glaucoma Diagnosis. *International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI)*, 2025.

2024

- 42 Min Shi*, Yan Luo*, **Yu Tian**, Lucy Shen, Tobias Elze, Nazlee Zebardast, Mohammad Eslami, Saber Kazeminasab, Michael V. Boland, David S. Friedman, Louis R. Pasquale, and Mengyu Wang. Equitable Artificial Intelligence for Glaucoma Screening with Fair Identity Normalization. *npj Digital Medicine (npj Digit Med)*, 2024.
- 41 Yan Luo*, **Yu Tian***, Min Shi, Tobias Elze, and Mengyu Wang. Harvard Glaucoma Fairness: A Retinal Nerve Disease Dataset for Fairness Learning and Fair Identity Normalization. *IEEE Transactions on Medical Imaging (TMI)*, 2024.
- 40 Yuyuan Liu, **Yu Tian**, Chong Wang, Yuanhong Chen, Fengbei Liu, Vasileios Belagiannis, and Gustavo Carneiro. Translation Consistent Semi-supervised Segmentation for 3D Medical Images. *IEEE Transactions on Medical Imaging (TMI)*, 2024.
- 39 Yuanhong Chen, Yuyuan Liu, Chong Wang, Michael Elliott, Chun Fung Kwok, Carlos Peña-Solorzano, **Yu Tian**, Fengbei Liu, Helen Frazer, Davis J McCarthy, and Gustavo Carneiro. BRAIDet: Learning to Detect Malignant Breast Lesion with Incomplete Annotations. *Medical Image Analysis (MedIA)*, 2024.
- 38 Min Shi, **Yu Tian**, Yan Luo, Tobias Elze, and Mengyu Wang. RNFLT2Vec: Artifact-Corrected Representation Learning for Retinal Nerve Fiber Layer Thickness Maps. *Medical Image Analysis (MedIA)*, 2024.
- 37 Yueyin Pang*, Melody Tang*, Min Shi, **Yu Tian**, Yan Luo, Tobias Elze, Louis R. Pasquale, Nazlee Zebardast, Michael V. Boland, David S. Friedman, Lucy Q Shen, Anagha Lokhande, and Mengyu Wang. Impact of Demographics on Regional Visual Field Loss and Deterioration in Glaucoma. *Translational Vision Science & Technology (TVST)*, 2024.

- 36 Min Shi, Anagha Lokhande, **Yu Tian**, Yan Luo, Mohammad Eslami, Saber Kazeminasab, Tobias Elze, Lucy Q. Shen, Louis R. Pasquale, Sarah R. Wellik, Carlos Gustavo De Moraes, Jonathan S Myers, Nazlee Zebardast, David S Friedman, Michael V Boland, and Mengyu Wang. Transformer-Based Deep Learning Prediction of 10-Degree Humphrey Visual Field Tests From 24-Degree Data. *Translational Vision Science & Technology (TVST)*, 2024.
- 35 **Yu Tian***, Congcong Wen*, Min Shi, Muhammad Muneeb Afzal, Hao Huang, Muhammad Osama Khan, Yan Luo, Yi Fang, and Mengyu Wang. FairDomain: Achieving Fairness in Cross-Domain Medical Image Segmentation and Classification. *European Conference on Computer Vision (ECCV)*, 2024.
- 34 Yan Luo, Min Shi, Osama Khan, Muhammad Afzal, Hao Huang, Shuaihang Yuan, **Yu Tian**, Tobias Elze, and Mengyu Wang. FairCLIP: Harnessing Fairness in Vision-and-Language Learning. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024.
- 33 Jiawen Zhu, Choubo Ding, **Yu Tian**, and Guansong Pang. Anomaly Heterogeneity Learning for Open-set Supervised Anomaly Detection. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024.
- 32 **Yu Tian**, Min Shi, Yan Luo, Ava Kouhana, Tobias Elze, and Mengyu Wang. FairSeg: A Large-Scale Medical Image Segmentation Dataset for Fairness Learning Using Segment Anything Model with Fair Error-Bound Scaling. *International Conference on Learning Representations (ICLR)*, 2024.
- 31 Qihang Zhou*, Guansong Pang*, **Yu Tian**, Shibo He, and Jiming Chen. AnomalyCLIP: Object-agnostic Prompt Learning for Zero-shot Anomaly Detection. *International Conference on Learning Representations (ICLR)*, 2024.
- 30 Jinan Zou*, Maihao Guo*, **Yu Tian***, Yuhao Lin, Haiyao Cao, Lingqiao Liu, Ehsan Abbasnejad, and Javen Qinfeng Shi. Semantic Role Labeling Guided Out-of-distribution Detection. *International Conference on Computational Linguistics (COLING)*, 2024.
- 29 **Yu Tian**, Leonardo Zorron Cheng Tao Pu, Yuyuan Liu, Gabriel Maicas, Johan W Verjans, Alastair D Burt, Seon Ho Shin, Rajvinder Singh, and Gustavo Carneiro. Detecting, Localising and Classifying Polyps from Colonoscopy Videos using Deep Learning. *Deep Learning for Medical Image Analysis (Book Chapter)*, 2024.
- 28 Deshun Yang*, Luhui Hu*, **Yu Tian***, Zihao Li, Chris Kelly, Bang Yang, Cindy Yang, and Yuexian Zou. WorldGPT: a Sora-inspired video AI agent as Rich world models from text and image inputs. *arXiv preprint arXiv:2403.07944*, 2024.
- 27 Jiahuan Yan, Zhouyang Hong, Yu Zhao, **Yu Tian**, Yunxin Liu, Travis Davies, and Luhui Hu. Generalized Robot Learning Framework. *arXiv preprint arXiv:2409.12061*, 2024.

2023

- 26 **Yu Tian**, Fengbei Liu, Guansong Pang, Yuanhong Chen, Yuyuan Liu, Johan Verjans, Rajvinder Singh, and Gustavo Carneiro. Self-supervised Pseudo Multi-class Pre-training for Unsupervised Anomaly Detection and Segmentation in Medical Images. *Medical Image Analysis (MedIA)*, 2023.
- 25 Min Shi, Jessica A Sun, Anagha Lokhande, **Yu Tian**, Yan Luo, Tobias Elze, Lucy Q Shen, and Mengyu Wang. Artifact Correction in Retinal Nerve Fiber Layer Thickness Maps Using Deep Learning and Its Clinical Utility in Glaucoma. *Translational Vision Science & Technology (TVST)*, 2023.
- 24 Min Shi, Anagha Lokhande, Mojtaba S Fazli, Vishal Sharma, **Yu Tian**, Yan Luo, Louis R Pasquale, Tobias Elze, Michael V Boland, Nazlee Zebardast, David S Friedman, Lucy Q Shen, and Mengyu Wang. Artifact-Tolerant Clustering-Guided Contrastive Embedding Learning for Ophthalmic Images in Glaucoma. *IEEE Journal of Biomedical and Health Informatics (JBHI)*, 2023.
- 23 Yan Luo*, Min Shi*, **Yu Tian***, Tobias Elze, and Mengyu Wang. Harvard Glaucoma Detection and Progression: A Multimodal Multitask Dataset and Generalization-Reinforced Semi-Supervised Learning. *IEEE/CVF international conference on computer vision (ICCV)*, 2023.
- 22 Chong Wang, Yuyuan Liu, Yuanhong Chen, Fengbei Liu, **Yu Tian**, Davis J McCarthy, Helen Frazer, and Gustavo Carneiro. Learning Support and Trivial Prototypes for Interpretable Image Classification. *IEEE/CVF international conference on computer vision (ICCV)*, 2023.
- 21 Yuanhong Chen, Fengbei Liu, Hu Wang, Chong Wang, **Yu Tian**, Yuyuan Liu, and Gustavo Carneiro. BoMD: Bag of Multi-label Descriptors for Noisy Chest X-ray Classification. *IEEE/CVF international conference on computer vision (ICCV)*, 2023.
- 20 Yuyuan Liu*, Choubo Ding*, **Yu Tian**, Guansong Pang, Vasileios Belagiannis, Ian Reid, and Gustavo Carneiro. Residual Pattern Learning for Pixel-wise Out-of-Distribution Detection in Semantic Segmentation. *IEEE/CVF international conference on computer vision (ICCV)*, 2023.

- 19 **Yu Tian**, Guansong Pang, Yuyuan Liu, Chong Wang, Yuanhong Chen, Fengbei Liu, Rajvinder Singh, Johan W Verjans, Mengyu Wang, and Gustavo Carneiro. Unsupervised Anomaly Detection in Medical Images with a Memory-augmented Multi-level Cross-attentional Masked Autoencoder. *International Workshop on Machine Learning in Medical Imaging (MICCAI-MLMI)*, 2023.
- 18 Chris Kelly, Luhui Hu, Cindy Yang, **Yu Tian**, Deshun Yang, Bang Yang, Zaoshan Huang, Zihao Li, and Yuexian Zou. UnifiedVisionGPT: Streamlining Vision-Oriented AI through Generalized Multimodal Framework. *arXiv preprint*, 2023.
- 17 Fengbei Liu, Yuanhong Chen, Chong Wang, **Yu Tian**, and Gustavo Carneiro. Asymmetric Co-teaching with Multi-view Consensus for Noisy Label Learning. *arXiv preprint*, 2023.

2022

- 16 **Yu Tian***, Yuyuan Liu*, Guansong Pang, Fengbei Liu, Yuanhong Chen, and Gustavo Carneiro. Pixel-wise Energy-biased Abstention Learning for Anomaly Segmentation on Complex Urban Driving Scenes. *European Conference on Computer Vision (ECCV Oral)*, 2022. **Oral**.
- 15 Yuanhong Chen, Hu Wang, Chong Wang, **Yu Tian**, Fengbei Liu, Yuyuan Liu, Michael Elliott, Davis J McCarthy, Helen Frazer, and Gustavo Carneiro. Multi-view Local Co-occurrence and Global Consistency Learning Improve Mammogram Classification Generalisation. *International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI)*, 2022. **Early Accept**.
- 14 Chong Wang, Yuanhong Chen, Yuyuan Liu, **Yu Tian**, Fengbei Liu, Davis J McCarthy, Michael Elliott, Helen Frazer, and Gustavo Carneiro. Knowledge Distillation to Ensemble Global and Interpretable Prototype-based Mammogram Classification Models. *International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI)*, 2022. **Early Accept**.
- 13 Fengbei Liu, Yuanhong Chen, **Yu Tian**, Liu Yuyuan, Wang Chong, Vasileios Belagiannis, and Gustavo Carneiro. NVUM: Non-Volatile Unbiased Memory for Robust Medical Image Classification. *International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI)*, 2022. **Early Accept**.
- 12 **Yu Tian**, Guansong Pang, Fengbei Liu, Yuyuan Liu, Chong Wang, Yuanhong Chen, Johan W Verjans, and Gustavo Carneiro. Contrastive Transformer-based Multiple Instance Learning for Weakly Supervised Polyp Frame Detection. *International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI)*, 2022. **Early Accept**.
- 11 Fengbei Liu*, **Yu Tian***, Yuanhong Chen, Yuyuan Liu, Vasileios Belagiannis, and Gustavo Carneiro. ACPL: Anti-curriculum Pseudo-labelling for Semi-supervised Medical Image Classification. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022.
- 10 Yuyuan Liu, **Yu Tian**, Yuanhong Chen, Fengbei Liu, Vasileios Belagiannis, and Gustavo Carneiro. Perturbed and Strict Mean Teachers for Semi-supervised Semantic Segmentation. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022.
- 9 Yuanhong Chen*, **Yu Tian*†**, Guansong Pang, and Gustavo Carneiro. Deep One-Class Classification via Interpolated Gaussian Descriptor. *Thirty-Sixth AAAI Conference on Artificial Intelligence (AAAI Oral)*, 2022. **Oral**.

2021

- 8 **Yu Tian**, Guansong Pang, Yuanhong Chen, Rajvinder Singh, Johan W Verjans, and Gustavo Carneiro. Weakly-supervised Video Anomaly Detection with Robust Temporal Feature Magnitude Learning. *IEEE/CVF international conference on computer vision (ICCV)*, 2021.
- 7 **Yu Tian**, Guansong Pang, Fengbei Liu, Seon Ho Shin, Johan W Verjans, Rajvinder Singh, and Gustavo Carneiro. Constrained Contrastive Distribution Learning for Unsupervised Anomaly Detection and Localisation in Medical Images. *International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI)*, 2021.
- 6 Fengbei Liu*, **Yu Tian***, Filipe R Cordeiro, Vasileios Belagiannis, Ian Reid, and Gustavo Carneiro. Self-supervised Mean Teacher for Semi-supervised Chest X-ray Classification. *International Workshop on Machine Learning in Medical Imaging (MICCAI)*, 2021.

2020

- 5 Leonardo Z.C.T. Pu, Gabriel Maicas, **Yu Tian**, Takeshi Yamamura, Masanao Nakamura, Hiroto Suzuki, Gurfarmaan Singh, Khizar Rana, Yoshiki Hirooka, Alastair D Burt, Mitsuhiro Fujishiro, Gustavo Carneiro, and Rajvinder Singh. Computer-aided diagnosis for characterization of colorectal lesions: comprehensive software that includes differentiation of serrated lesions. *Gastrointestinal endoscopy (GIE)*, 2020.

- 4 **Yu Tian**, Gabriel Maicas, Leonardo Zorron Cheng Tao Pu, Rajvinder Singh, Johan W Verjans, and Gustavo Carneiro. Few-shot anomaly detection for polyp frames from colonoscopy. *International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI)*, 2020.
- 3 Yuyuan Liu*, **Yu Tian***†, Gabriel Maicas, Leonardo Zorron Cheng Tao Pu, Rajvinder Singh, Johan W Verjans, and Gustavo Carneiro. Photoshopping colonoscopy video frames. *IEEE 17th International Symposium on Biomedical Imaging (ISBI)*, 2020.

2019

- 2 Leonardo Z.C.T. Pu, Gabriel Maicas, **Yu Tian**, Yan Yamamura, Takeshi Nakamura, Masanao Suzuki, Gurfarmaan Singh, Khizar Rana, Yoshiaki Hirooka, and Alastair D. Burt. Prospective study assessing a comprehensive computer-aided diagnosis for characterization of colorectal lesions: Results from different centers and imaging technologies. *Journal of Gastroenterology and Hepatology*, 2019.
- 1 **Yu Tian**, Leonardo ZCT Pu, Rajvinder Singh, Alastair D Burt, and Gustavo Carneiro. One-stage five-class polyp detection and classification. *IEEE 16th International Symposium on Biomedical Imaging (ISBI)*, 2019.

Teaching Experience

- CAP4453 Robot Vision, University of Central Florida, since 2025 Fall, Undergraduate Course.
- Artificial Intelligence in Medicine, Harvard University, 2023 Spring and Fall, 2024 Spring
- COMP SCI 7097A/B - Master Data Science Research Project, University of Adelaide, 2021

Invited Talks

- Panellist keynote speaker at CV4CHL workshop at CVPR 2026
- Invited talk on fairness learning at HIT Webinar.
- Invited talk on fairness learning at Suzhou Institute for Advanced Study, USTC.
- Selected as one of the five researchers to give a presentation about AI for vision science on Fellow's Recognition Day of Harvard Ophthalmology Department.
- Co-organising and presenting the CVPR 2023 tutorial 'Recent Advances in Anomaly Detection'.
- Invited talk at IJCAI Workshop on "AI for Anomalies and Novelties" 2021 about weakly supervised video anomaly detection.
- Invited talk at GESA Research Workshop 2022 about Anomaly Detection in Medical Imaging.

Student Advising

- 2026– Zicheng Jin (CS PhD student at UCF, Main advisor)
- 2026– Ruizhi Qian (CS PhD student at UCF, Main advisor)
- 2026– Nafisa Islam (CE PhD student at UCF, Main advisor)
- 2025– Tianxingjian Ding (CS PhD student at UCF, Main advisor)
- 2025– Abdul Mohaimen Al Radi (CS PhD student at UCF, Main advisor)
- 2025– Dannong Wang (CS PhD student at UCF, Main advisor)
- 2025 Mingen (Eric) Li (NSF REU student at UC Berkeley)
- 2025 Syn Nguyen (NSF REU student at Cal State)
- 2024 Milad Masroor (PhD student at University of Surrey, co-advised with Prof Gustavo Carneiro)
- 2024 Fanyang Yu (PhD student at UPenn)
- 2023 Jiawen Zhu (PhD student at Singapore Management University, co-advised with Guansong Pang)
- 2023 Qihang Zhou (PhD student at the Zhejiang University, co-advised with Guansong Pang)
- 2023 Axel De Nardin (Research Intern at Harvard) – Now Assistant Professor at University of Udine
- 2023 Ava Kouhana (Research Intern at Harvard – Now a MSc student at Stanford)
- 2023 Carola Rutigliani (Research Intern at Harvard – Now a postdoc at Stanford)
- 2022 Maihao Guo (Master student at the University of Adelaide)
- 2021 Ruixuan Zou (Master student at the University of Adelaide – Now a research assistant at AIML)
- 2020 Yuanhong Chen (Honour student at the University of Adelaide – Now a Postdoc at Adelaide)
- 2019 Fengbei Liu (Junior PhD student at the University of Adelaide – Now a Postdoc at Cornell)

2019 Yuyuan Liu (Honour student at the University of Adelaide – Now a Postdoc at Oxford)

Additional Lab Student Researchers

Jessica Zhang; MD Student Researcher; UCF College of Medicine

Yama Jiang; BS/MS Student Researcher; BS/MS UCF

Yusra Ahmed; MS Student Researcher; MS UCF

Nguyen Bui; BS Student Researcher; BS UCF

Shilong Zhang; Research Intern; BS IIT

Chuhan Song; Research Intern; BS UCL

Chongcong Jiang; Research Intern; UCF

Yuran Zhang; Research Intern; BS McGill

Professional Activities

Area Chair

- Area Chair for AISTATS 2027

Guest Editor

- MDPI Sensors Special Issue: Biomedical Sensing and Bioinformatics Processing

Journal Reviewer

- IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**)
- IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**)
- IEEE Transactions on Medical Imaging (**TMI**)
- IEEE Transactions on Image Processing (**TIP**)
- International Journal of Computer Vision (**IJCV**)
- ACM Computing Surveys (**CSUR**)
- Pattern Recognition (**PR**)
- Computerized Medical Imaging and Graphics
- Plos Digital Health

Conference Reviewer/Program Committee

- International Conference on Machine Learning (**ICML**)
- International Conference on Learning Representations (**ICLR**)
- Conference on Neural Information Processing Systems (**NeurIPS**)
- International Conference on Computer Vision and Pattern Recognition (**CVPR**)
- International Conference on Computer Vision (**ICCV**)
- European Conference on Computer Vision (**ECCV**)
- Thirty-Sixth AAAI Conference on Artificial Intelligence (**AAAI**)
- International Conference on Medical Imaging Computing and Computer-Assisted Intervention (**MICCAI**)
- ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD**)

Honors and Awards

2026 Stanford University/Elsevier World's Top 2% Scientists

2026 Academy of Science, Engineering and Medicine of Florida (ASEMFL) Rising Star Award

2019 Minister's Research and Innovation Award, SA Health (Finalist)

2019–2022 University of Adelaide ECMS Research Fellowship/Scholarship (Full Fee)

2018 Dean's Recognition of Academic Excellence of Honours Graduate (GPA 7.0/7.0)

Media Harvard News, University of Adelaide, The Lead, The Advertiser Australia, Hospital and Healthcare Coverage Australia, IT Wire, Radiology Business