

Profile

- Postdoctoral Research Fellow of University of Pennsylvania.
- Previous Postdoc at Harvard University, PhD in computer science from the Australian Institute for Machine Learning (AIML), University of Adelaide.

Areas of Interests

- **Deep Learning, Computer Vision, Medical Image Analysis, Trustworthy AI (Anomaly Detection, Out-of-Distribution Detection, Fairness Learning).**

Education/Training

- 7/2024-Now **Postdoctoral**, University of Pennsylvania.
- Research Interests: Computer Vision, Trustworthy AI, Medical AI
- 8/2022-7/2024 **Postdoctoral**, Harvard University.
- Research Interests: Computer Vision, Trustworthy AI, Medical AI
- 6/2022 **PhD**, *Computer Science*, Australian Institute for Machine Learning, University of Adelaide.
- **UoA ranked 92nd overall and 13th in Artificial Intelligence, globally by US News.**
 - PhD thesis: Anomaly Detection in Computer Vision and Medical Imaging.
 - Awarded University of Adelaide ECMS Research Scholarship (Full Fee)
- 12/2018 **BSc (First-Class Honours)**, *Computer Science*, University of Adelaide, 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

Publications

- Dr. Yu Tian has authored/co-authored over 30 papers in top-tier machine learning, computer vision, and medical AI venues (ICLR, AAAI, CVPR, ICCV, ECCV, MICCAI, TPAMI, TMI, MedIA, etc.). As of 07/2024, his works have been cited over **1,300** times, with h-index = **16** [[Google Scholar](#)]. Below are his publications: * **indicates equal contribution**, ‡ **denotes the author is his mentee**, and † **denotes the corresponding author**.
- 37 **Yu Tian**, and others. FairDomain: Achieving Fairness in Cross-Domain Medical Image Segmentation and Classification. *European Conference on Computer Vision (ECCV)*, 2024.
- 36 Yueyin Pang*, Melody Tang*, Min Shi, **Yu Tian**, and others. Impact of Demographics on Regional Visual Field Loss and Deterioration in Glaucoma. *Translational Vision Science & Technology (TVST)*, 2024.
- 35 Min Shi, **Yu Tian**, and others. Transformer-based Deep Learning Prediction of 10-Degree Humphrey Visual Field Tests from 24-Degree Data. *Translational Vision Science & Technology (TVST)*, 2024.
- 34 Jinan Zou*‡, Maihao Guo*‡, **Yu Tian***, and others. Semantic Role Labeling Guided Out-of-distribution Detection. *The Joint International Conference on Computational Linguistics, Language Resources and Evaluation (LREC-COLING)*, 2024.
- 33 Yan Luo, Min Shi, Muhammad Osama Khan, Muhammad Muneeb Afzal, Hao Huang, Shuaihang Yuan, **Yu Tian**, and others. FairCLIP: Harnessing Fairness in Vision-and-Language Learning. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024.
- 32 Jiawen Zhu, Choubo Ding, **Yu Tian**, and others. Anomaly Heterogeneity Learning for Open-set Supervised Anomaly Detection. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024.
- 31 Yan Luo*, **Yu Tian***, and others. Harvard Glaucoma Fairness: A Retinal Nerve Disease Dataset for Fairness Learning and Fair Identity Normalization. *IEEE Transactions on Medical Imaging (TMI)*, 2024.

- 30 Yuyuan Liu, **Yu Tian**, and others. Translation Consistent Semi-supervised Segmentation for 3D Medical Images. *IEEE Transactions on Medical Imaging (TMI)*, 2024.
- 29 Yuanhong Chen, Yuyuan Liu, Chong Wang, Michael Elliott, Chun Fung Kwok, Carlos Pena-Solorzano, **Yu Tian**, and others. BRAIxDet: Learning to Detect Malignant Breast Lesion with Incomplete Annotations. *Medical Image Analysis (MedIA)*, 2024.
- 28 **Yu Tian**, and others. FairSeg: A Large-scale Medical Image Segmentation Dataset for Fairness Learning with Fair Error-Bound Scaling. *International Conference on Learning Representations (ICLR)*, 2024.
- 27 Qihang Zhou^{*†}, Guansong Pang^{*}, **Yu Tian**, and others. Anomaly-CLIP: Class-agnostic prompt learning for zero-shot anomaly detection. *International Conference on Learning Representations (ICLR)*, 2024.
- 26 **Yu Tian**^{*}, Fengbei Liu^{*†}, and others. Self-supervised Multi-class Pre-training for Unsupervised Anomaly Detection and Segmentation in Medical Images. *Medical Image Analysis (MedIA)*, 2023.
- 25 Min Shi, **Yu Tian**, and others. RNFLT2Vec: Artifact-Corrected Representation Learning for Retinal Nerve Fiber Layer Thickness Maps. *Medical Image Analysis (MedIA)*, 2023.
- 24 Min Shi, Jessica Sun, Anagha Lokhande, **Yu Tian**, and others. Artifact Correction in Retinal Nerve Fiber Layer Thickness Maps Using Deep Learning and Its Clinical Utility in Glaucoma. *Translational Vision Science & Technology (TVST)*, 2023.
- 23 **Yu Tian**, and others. 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.
- 22 Yan Luo^{*}, Min Shi^{*}, **Yu Tian**^{*}, and others. Harvard Glaucoma Detection and Progression: A Multimodal Multitask Dataset and Generalization-Reinforced Semi-Supervised Learning. *International Conference on Computer Vision (ICCV)*, 2023.
- 21 Chong Wang, Yuyuan Liu, Yuanhong Chen, Fengbei Liu, **Yu Tian**, and others. Learning Support and Trivial Prototypes for Interpretable Image Classification. *International Conference on Computer Vision (ICCV)*, 2023.
- 20 Yuanhong Chen, Fengbei Liu, Hu Wang, Chong Wang, Yuyuan Liu, **Yu Tian**, Gustavo Carneiro. BoMD: Bag of Multi-label Descriptors for Noisy Chest X-ray Classification. *International Conference on Computer Vision (ICCV)*, 2023.
- 19 Yuyuan Liu^{*†}, Choubo Ding^{*†}, **Yu Tian**, and others. Residual Pattern Learning for Pixel-wise Out-of-Distribution Detection in Semantic Segmentation. *International Conference on Computer Vision (ICCV)*, 2023.
- 18 Min Shi, Mojtaba S. Fazli, Vishal Sharma, **Yu Tian**, and others. Artifact-Tolerant Clustering-Guided Contrastive Embedding Learning for Ophthalmic Images. *IEEE Journal of Biomedical and Health Informatics (JBHI)*, 2023.
- 17 **Yu Tian**^{*}, Yuyuan Liu^{*†}, and others. Pixel-wise Energy-biased Abstention Learning for Anomaly Segmentation on Complex Urban Driving Scenes. *European Conference on Computer Vision (ECCV)*, 2022, **Oral**. (Acceptance rate < 2.7%)
- 16 Yuanhong Chen, Wang Hu, Chong Wang, **Yu Tian**, and others. Multi-view Local Co-occurrence and Global Consistency Learning Improve Mammogram Classification Generalisation. *International Conference on Medical Imaging Computing and Computer-Assisted Intervention (MICCAI)*, 2022, **Early Accept**. (Acceptance rate < 13%)
- 15 Chong Wang, Yuanhong Chen, Yuyuan Liu, **Yu Tian**, and others. Knowledge Distillation to Ensemble Global and Interpretable Prototype-based Mammogram Classification Models. *International Conference on Medical Imaging Computing and Computer-Assisted Intervention (MICCAI)*, 2022, **Early Accept**. (Acceptance rate < 13%)
- 14 Fengbei Liu, Yuanhong Chen, **Yu Tian**, and others. NVUM: Non-Volatile Unbiased Memory for Robust Medical Image Classification. *International Conference on Medical Imaging Computing and Computer-Assisted Intervention (MICCAI)*, 2022, **Early Accept**. (Acceptance rate < 13%)
- 13 **Yu Tian**, and others. Contrastive Transformer-based Multiple Instance Learning for Weakly Supervised Polyp Frame Detection. *International Conference on Medical Imaging Computing and Computer-Assisted Intervention (MICCAI)*, 2022, **Early Accept**. (Acceptance rate < 13%)

- 12 Fengbei Liu^{*‡}, **Yu Tian**^{*}, and others. ACPL: Anti-curriculum Pseudo-labelling for Semi-supervised Medical Image Classification. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022. (Acceptance rate < 26%)
- 11 Yuyuan Liu[‡], **Yu Tian**, and others. Perturbed and Strict Mean Teachers for Semi-supervised Semantic Segmentation. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022. (Acceptance rate < 26%)
- 10 Yuanhong Chen^{*‡}, **Yu Tian**^{*†}, and others. Deep One-Class Classification via Interpolated Gaussian Descriptor. In *Thirty-Sixth AAAI Conference on Artificial Intelligence (AAAI)*, 2022, **Oral**. (Acceptance rate < 4.5%)
- 9 **Yu Tian**, and others. Weakly-supervised Video Anomaly Detection with Robust Temporal Feature Magnitude Learning. In *International Conference on Computer Vision (ICCV)*, 2021. (Acceptance rate < 25%)
- 8 **Yu Tian**, and others. Constrained Contrastive Distribution Learning for Unsupervised Anomaly Detection and Localisation in Medical Images. In *International Conference on Medical Imaging Computing and Computer-Assisted Intervention (MICCAI)*, 2021. (Acceptance rate < 32%)
- 7 Fengbei Liu^{*‡}, **Yu Tian**^{*}, and others. Self-supervised Mean Teacher for Semi-supervised Chest X-ray Classification. *International Workshop on Machine Learning in Medical Imaging (MICCAI-MLMI)*, 2021.
- 6 **Yu Tian**, and others. Few-Shot Anomaly Detection for Polyp Frames from Colonoscopy. *International Conference on Medical Imaging Computing and Computer-Assisted Intervention (MICCAI)*, 2020. (Acceptance rate < 30%)
- 5 Yuyuan Liu^{*‡}, **Yu Tian**^{*†}, and others. Photoshopping Colonoscopy Video Frames. *International Symposium on Biomedical Imaging (ISBI)*, 2020. (Acceptance rate < 35%)
- 4 **Yu Tian**, and others. One-stage Five-class Polyp Detection and Classification. In *International Symposium on Biomedical Imaging (ISBI)*, 2019. (Acceptance rate < 35%)
- 3 **Yu Tian**, and others. Detecting, Localising and Classifying Polyps from Colonoscopy Videos using Deep Learning. Book chapter in *Deep Learning for Medical Image Analysis (second edition)*, 2024.
- 2 Leonardo Z.C.T. Pu[‡], Gabriel Maicas, **Yu Tian**, and others. Computer-aided diagnosis for characterization of colorectal lesions: a comprehensive software including serrated lesions. In *Gastrointestinal Endoscopy (GIE)*, 2020. (IF = 10.396)
- 1 Leonardo Z.C.T. Pu, Gabriel Maicas, **Yu Tian**, and others. Prospective study assessing a comprehensive computer-aided diagnosis for characterization of colorectal lesions: Results from different centers and imaging technologies. In *Journal of Gastroenterology and Hepatology*, 2019. (IF = 4.029)

Preprint/Under-Review

- 13 Yan Luo, Min Shi, Congcong Wen, Yan Luo, **Yu Tian**, and others. Impact of Disease Prevalence and Data Distribution on Fairness Guarantees in Equitable Deep Learning. *NeurIPS*, Under Review, 2024.
- 12 Min Shi, Muhammad Muneeb, Hao Huang, Congcong Wen, Yan Luo, Muhammad Osama, **Yu Tian**, and others. Equitable deep learning for diabetic retinopathy detection using multi-dimensional retinal imaging with fair adaptive scaling: a retrospective study. *Lancet Digital Health*, Under Review, 2024.
- 11 Min Shi, Yan Luo, **Yu Tian**, and others. Equitable Artificial Intelligence for Glaucoma Screening with Fair Identity Normalization. *NPJ Digital Medicine*, Under Review, 2024.
- 10 Christopher Kelly, Luhui Hu, Jiayin Hu, **Yu Tian**, and others. VisionGPT-3D: A Generalized Multimodal Agent for Enhanced 3D Vision Understanding. *Submit to ECCV*, 2024.
- 9 DeShun Yang^{*}, Luhui Hu^{*}, **Yu Tian**^{*}, and others. WorldGPT: A Sora-Inspired Video AI Agent as Rich World Models from Text and Image Inputs. *Submit to ECCV*, 2024.
- 8 Yan Luo, Min Shi, Muhammad Khan, Muhammad Afzal, Shuaihang Yuan, Congcong Wen, Min Shi, **Yu Tian**, and others. FairDiffusion: Enhancing Equity in Latent Diffusion Models via Fair Bayesian Perturbation. *Submit to ECCV*, 2024.
- 7 Chris Kelly, Luhui Hu, Cindy Yang, **Yu Tian**, and others. UnifiedVisionGPT: Streamlining Vision-Oriented AI through Generalized Multimodal Framework. *Submit to ECCV*, 2024.
- 6 Hu Wang, Congbo Ma, **Yu Tian**, and others. Enhancing Multi-modal Learning: Meta-learned Cross-modal Knowledge Distillation for Handling Missing Modalities. *Submit to ECCV*, 2024.

- 5 Yan Luo*, **Yu Tian***, and others. Harvard Eye Fairness: A Large-Scale 3D Imaging Dataset for Equitable Eye Diseases Screening and Fair Identity Scaling. *Submit to TPAMI*, 2024.
- 4 **Yu Tian**, and others. A Deep Learning Framework for Quantifying Impacts of Eye and Systemic Diseases on Retinal Layers. *Submit to JAMA Network Open (Selected as Oral in ARVO Imaging)*, 2023.
- 3 Min Shi*, Congcong Wen*, **Yu Tian***, and others. Harvard-DR: A 3D Imaging Dataset of Diabetic Retinopathy for Fairness Learning. *Submit to Medical Image Analysis (MedIA)*, 2023.
- 2 Saber Kazeminasab, Mojtaba Fazli, Sayuri Sekimitsu, Mohammad Eslami, Min Shi, **Yu Tian**, and others. An Artificial Intelligence Method for Phenotyping of OCT Scans Using Unsupervised and Self-supervised Deep Learning. *IEEE Journal of Biomedical and Health Informatics (JBHI)*, Under Review, 2023.
- 1 Fengbei Liu, Yuanhong Chen, Chong Wang, **Yu Tian**, Gustavo Carneiro. Asymmetric Co-teaching with Multi-view Consensus for Noisy Label Learning. *Arxiv Preprint, Under Review*, 2024.

Peer-Reviewed Conference Abstracts

- 33 Mohammad Eslami, Lakshmi Sritan Motati, Rohan Kalahasty, Srikar Kusumanchi, Saber Kazeminasab, Min Shi, Yan Luo, **Yu Tian**, Dhruva Gupta, Milen Raytchev, Michael G Morley, Mengyu Wang, Nazlee Zebardast, Tobias Elze. A Practical Barrier: AI-Powered CDR Extraction in Fundus Photos. *Investigative Ophthalmology & Visual Science (ARVO Imaging)*, 2024.
- 32 Saber Kazeminasab Hashemabad, Surya Pulukuri, Yan Zhao, Kanza Aziz, Sayuri Sekimitsu, Mohammad Eslami, Yan Luo, Min Shi, Yu Tian, Hannah Rana, Milen Raytchev, Mengyu Wang, Tobias Elze, Janey Wiggs, Nazlee Zebardast. Genetically Adjusted Optic Cup to Disc Ratio (CDR) Using a Two-Phase Training Deep Learning Model. *Investigative Ophthalmology & Visual Science (ARVO Imaging)*, 2024.
- 31 **Yu Tian**, Min Shi, Yan Luo, Mohammad Eslami, Saber Kazeminasab Hashemabad, Hannah Rana, Leo A Kim, Louis R Pasquale, Meenakashi Gupta, Tobias Elze, Lucia Sobrin, Mengyu Wang. External Eye Photos for Diabetic Retinopathy Detection with Deep Learning. *Investigative Ophthalmology & Visual Science (ARVO)*, 2024.
- 30 Yan Luo, **Yu Tian**, Min Shi, Leo A Kim, Louis R Pasquale, Meenakashi Gupta, Tobias Elze, Lucia Sobrin, Mengyu Wang. A New Deep Learning Technique Termed Fair Identity Scaling to Improve Model Equity for Diabetic Retinopathy Screening. *Investigative Ophthalmology & Visual Science (ARVO)*, **Oral**, 2024.
- 29 Yan Luo, **Yu Tian**, Min Shi, Leo A Kim, Louis R Pasquale, Meenakashi Gupta, Tobias Elze, Lucia Sobrin, Mengyu Wang. A New Deep Learning Technique Termed Fair Identity Scaling to Improve Model Equity for Diabetic Retinopathy Screening. *Investigative Ophthalmology & Visual Science (ARVO)*, **Oral**, 2024.
- 28 Sergio Mendoza, Luo Song, Yan Luo, **Yu Tian**, Min Shi, Leo A Kim, Tobias Elze, Mengyu Wang. Demographic Disparities in Diabetic Retinopathy Among US Eye Hospital Patients. *Investigative Ophthalmology & Visual Science (ARVO)*, 2024.
- 27 Hannah Rana, Saber Kazeminasab Hashemabad, Mohammad Eslami, Yan Luo, Min Shi, **Yu Tian**, Nazlee Zebardast, Mengyu Wang, Tobias Elze, Sajib Saha. Machine and deep learning predictions of visual fields from spectral-domain optical coherence tomography retinal nerve fiber layer thickness maps in glaucoma vision loss. *Investigative Ophthalmology & Visual Science (ARVO)*, 2024.
- 26 Iyad Majid, Abhilash Katuru, Min Shi, **Yu Tian**, Yan Luo, In Young Chun, Tobias Elze, Louis R Pasquale, Nazlee Zebardast, Michael V Boland, David S Friedman, Lucy Q Shen, Mengyu Wang. Comparing Optical Coherence Tomography Scans and Scanning Laser Ophthalmoscopy Fundus Photos in Glaucoma Detection Defined by Functional Tests. *Investigative Ophthalmology & Visual Science (ARVO)*, 2024.
- 25 Mengyu Wang, Yan Luo, Yu Tian, Lucy Q Shen, Tobias Elze, Nazlee Zebardast, Michael V Boland, David S Friedman, Louis R Pasquale, Min Shi. Equitable Deep Learning for Glaucoma Screening with Fair Identity Normalization. *Investigative Ophthalmology & Visual Science (ARVO)*, 2024.
- 24 Mohammad Eslami, Saber Kazeminasab Hashemabad, Hannah Rana, Milen Raytchev, Lucy Zha, Yan Luo, **Yu Tian**, Min Shi, Leo A Kim, Tobias Elze, Mengyu Wang. Improving Cup-Rim Segmentation by Fair Error-Bound Scaling With Segment Anything Model (SAM). *Investigative Ophthalmology & Visual Science (ARVO)*, 2024.

- 23 Mohammad Eslami, Saber Kazeminasab Hashemabad, Hannah Rana, Milen Raytchev, Yan Luo, Min Shi, **Yu Tian**, Michael G Morley, Nazlee Zebardast, Michael V Boland, David S Friedman, Mengyu Wang, Tobias Elze. Feasibility of Identifying High-Risk Glaucoma Patients Before the Onset of Disease. *Investigative Ophthalmology & Visual Science (ARVO)*, 2024.
- 22 Mohammad Eslami, Saber Kazeminasab Hashemabad, Hannah Rana, Milen Raytchev, Yan Luo, Min Shi, **Yu Tian**, Michael G Morley, Nazlee Zebardast, Michael V Boland, David S Friedman, Mengyu Wang, Tobias Elze. Feasibility of Identifying High-Risk Glaucoma Patients Before the Onset of Disease. *Investigative Ophthalmology & Visual Science (ARVO)*, 2024.
- 22 Saber Kazeminasab Hashemabad, Mohammad Eslami, Mousa Moradi, Hannah Rana, Min Shi, Yan Luo, **Yu Tian**, Milen Raytchev, Mengyu Wang, Tobias Elze, Nazlee Zebardast. An unsupervised deep learning method for identifying glaucoma progression patterns using longitudinal ganglion cell complex (GCC) scans. *Investigative Ophthalmology & Visual Science (ARVO)*, 2024.
- 21 Saber Kazeminasab Hashemabad, Mohammad Eslami, Mousa Moradi, Hannah Rana, Min Shi, Yan Luo, **Yu Tian**, Milen Raytchev, Mengyu Wang, Tobias Elze, Nazlee Zebardast. An unsupervised deep learning method for identifying glaucoma progression patterns using longitudinal ganglion cell complex (GCC) scans. *Investigative Ophthalmology & Visual Science (ARVO)*, 2024.
- 20 Abhilash Katuru, Iyad Majid, Min Shi, **Yu Tian**, Yan Luo, Tobias Elze, Mengyu Wang. Detecting Glaucoma Using Iris Photos with Deep Learning. *Investigative Ophthalmology & Visual Science (ARVO)*, **MIT Outstanding Poster Award**, 2024.
- 19 Min Shi, Yan Luo, **Yu Tian**, Mohammad Eslami, Saber Kazeminasab Hashemabad, Hannah Rana, Tobias Elze, Lucy Q Shen, Louis R Pasquale, Nazlee Zebardast, Michael V Boland, David S Friedman, Mengyu Wang. Personalizing Circumpapillary Retinal Nerve Fiber Layer Thickness Norms with Individual Retinal Anatomy in Glaucoma. *Investigative Ophthalmology & Visual Science (ARVO)*, 2024.
- 18 Luo, Yan, Min Shi, **Yu Tian**, Mohammad Eslami, Saber Kazeminasab Hashemabad, Hannah Rana, Tobias Elze, and others. Understanding Equity in Vision-and-Language Learning for Glaucoma Diagnosis with Deep Learning. *Investigative Ophthalmology & Visual Science (ARVO)*, **Oral**, 2024.
- 17 Mohammad Eslami, Saber Kazeminasab Hashemabad, Min Shi, Yan Luo, **Yu Tian**, and others. Evaluation of Landmark Localization Models for Fundus Imaging Conditions. *Investigative Ophthalmology & Visual Science (ARVO)*, **Oral**, 2023.
- 16 Saber Kazeminasab Hashemabad, Mohammad Eslami, Sayuri Sekimitsu, Min Shi, Yan Luo, **Yu Tian**, and others. A Performance Evaluation Method for Unsupervised OCT Phenotype Discovery using Deep Learning. *Investigative Ophthalmology & Visual Science (ARVO)*, 2023.
- 15 Mengyu Wang, Tobias Elze, Louis R. Pasquale, Lucy Q. Shen, Min Shi, **Yu Tian**, Yan Luo. Equitable Deep Learning for Glaucoma Progression Forecasting. *Investigative Ophthalmology & Visual Science (ARVO)*, **ARVO Travel Grant**, 2023.
- 14 Anagha Lokhande, Yan Luo, Min Shi, **Yu Tian**, and others. The Impact of Myopia on Regional Visual Field Loss and Progression in Glaucoma. *Investigative Ophthalmology & Visual Science (ARVO)*, **Oral, ARVO Travel Grant**, 2023.
- 13 Hui Wang, Franziska G. Rauscher, Elena Martinez-Perez, Thomas Peschel, Mohammad Eslami, Saber Kazeminasab, Yan Luo, Min Shi, **Yu Tian**, and others. Development and evaluation of an R library to align macula and optic disc centered optical coherence tomography (OCT) scans, *Investigative Ophthalmology & Visual Science (ARVO)*, 2023.
- 12 Min Shi, **Yu Tian**, and others. Explainable Deep Learning Prediction of 10-2 Visual Field from 24-2 Visual Field Using Transformer *Investigative Ophthalmology & Visual Science (ARVO)*, **Oral, ARVO Travel Grant**, 2023.
- 11 Lakshmi Sritan Motati, Rohan Kalahasty, Saber Kazeminasab, Min Shi, Yan Luo, **Yu Tian**, and others. Evaluation of Robustness of Disc/Cup Segmentation in Different Fundus Imaging Conditions. *Investigative Ophthalmology & Visual Science (ARVO)*, 2023.
- 10 Mohammad Eslami, Saber Kazeminasab Hashemabad, Min Shi, Yan Luo, **Yu Tian**, and others. Visual Field (VF) change-based archetype analysis for early-stage glaucoma detection. *Investigative Ophthalmology & Visual Science (ARVO)*, 2023.
- 9 **Yu Tian**, and others. Predicting Personalized Near-Normal Retinal Nerve Fiber Layer Thickness for Glaucoma Patients with Deep Learning. *Investigative Ophthalmology & Visual Science (ARVO)*, 2023.

- 8 Qingying Jin, Franziska G. Rauscher, Mengyu Wang, Mohammad Eslami, Saber Kazeminasab Hashemabad, Yan Luo, Min Shi, **Yu Tian**, and others. Circumpapillary retinal nerve fiber layer thickness (cpRNFLT) and medication related to the cardiovascular system. *Investigative Ophthalmology & Visual Science (ARVO)*, 2023.
- 7 Yan Luo, Min Shi, **Yu Tian**, and others. Retinal Surface Contour is Predictive of Fast Glaucoma Progression with Deep Learning. *Investigative Ophthalmology & Visual Science (ARVO)*, **ARVO Travel Grant**, 2023.
- 6 **Yu Tian**, and others. The Impact of Age-Related Macular Degeneration on Retinal Layers Quantified by Deep Learning. *Investigative Ophthalmology & Visual Science (ARVO Imaging)*, **Oral**, 2023.
- 5 Mohammad Eslami, Lakshmi Sritan Motati, Rohan Kalahasty, Saber Kazeminasab Hashemabad, Min Shi, Yan Luo, **Yu Tian** and others. Deep Learning based Adversarial Disturbances in Fundus Image Analysis. *Investigative Ophthalmology & Visual Science (ARVO Imaging)*, 2023.
- 4 Hannah Rana, Tobias Elze, Mohammad Eslami, Yan Luo, Sajib Saha, Min Shi, **Yu Tian**, and others. Improving structure-function correlations in mild glaucoma by aligning retinal nerve fiber layer thickness (RNFLT) maps to compensate for individual eye anatomy. *Investigative Ophthalmology & Visual Science (ARVO Imaging)*, 2023.
- 3 Saber Kazeminasab, Hannah Rana, Tobias Elze, Mohammad Eslami, **Yu Tian**, and others. A graph neural network-based clustering method for glaucoma detection from OCT scans considering uncertainties in the number of clusters. *Investigative Ophthalmology & Visual Science (ARVO Imaging)*, 2023.
- 2 Min Shi, **Yu Tian**, and others. Deep Learning Prediction of Visual Field Combining Optic Nerve Head and Macular Optical Coherence Tomography Scans. *Investigative Ophthalmology & Visual Science (ARVO Imaging)*, 2023.
- 1 Yan Luo, Franziska Rauscher, Tobias Elze, **Yu Tian**, and others. Assessing Retinal Layers' Association with Diabetes using a Deep Learning Framework. *Investigative Ophthalmology & Visual Science (ARVO Imaging)*, 2023.

Teaching Experience

- 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

- Invited talk at the University of Texas Southwestern Medical Center. – May, 2024
- Invited talk at Washington State University. – March, 2024
- Invited talk on medical AI at Icahn School of Medicine at Mount Sinai, New York. – Jan, 2024
- 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.
- Invited talk on medical anomaly detection at Suzhou Institute for Advanced Study, USTC.

Student Advising

- 2019 Yuyuan Liu (Honour student at the University of Adelaide - Now a PhD student at AIML)
 - Project: Unsupervised Anomaly Detection for Colonoscopy (Papers in ISBI and CVPR)
- 2019 Fengbei Liu (Junior PhD student at the University of Adelaide - Now a Postdoc at Cornell)
 - Project: Unsupervised Anomaly Detection for Colonoscopy (Papers in ISBI and CVPR)
- 2020 Yuanhong Chen (Honour student at the University of Adelaide - Now a research scientist at Sony)
 - Project: Image Anomaly Detection (Papers in AAAI and ICCV)

- 2021 Ruixuan Zou (Master student at the University of Adelaide - Now a research assistant at AIML)
 - Project: Anomaly Detection with Transformer for Medical Imaging
- 2023 Axel De Nardin (Research Intern at Harvard)
 - Project: 3D Anomaly Detection and Medical AI
- 2023 Ava Kouhana (Research Intern at Harvard - Now an MSc student at Stanford)
 - Project: Computer Vision and Medical AI
- 2023 Carola Rutigliani (Research Intern at Harvard - Now a postdoc at Stanford)
 - Project: Medical AI

Professional Activities

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 Learning Representations (**ICLR**) 2024
- Conference on Neural Information Processing Systems (**NeurIPS**) 2023, 2024
- International Conference on Computer Vision and Pattern Recognition (**CVPR**) 2022, 2023, 2024
- International Conference on Computer Vision (**ICCV**) 2021, 2023
- Thirty-Sixth AAAI Conference on Artificial Intelligence (**AAAI**) 2022, 2023, 2024
- European Conference on Computer Vision (**ECCV**) 2022, 2024
- International Conference on Medical Imaging Computing and Computer-Assisted Intervention (**MICCAI**) 2021, 2022, 2023, 2024
- ANDEA Workshop, **KDD** 2022

Honors and Awards

- 2019–2022 University of Adelaide ECMS Research Scholarship (Full Fee)
- 2018 Dean’s Recognition of Academic Excellence of Honours Graduate (GPA 7.0/7.0)
- Media Coverage Harvard News, University of Adelaide, The Lead, The Advertiser Australia, Hospital and Healthcare Australia, IT Wire, Radiology Business