

YU ZHANG

PERSONAL INFORMATION	Ph.D. Candidate (ABD) Department of Computer Science University of Kentucky 329 Rose Street, Lexington, KY 40506 USA	Homepage : yuzhang03.github.io Phone : +1(872)267-3968 Email : yuzh03@gmail.com Google Scholar
EDUCATION	University of Kentucky Ph.D. in Computer Science Advisor : Nathan Jacobs GPA : 3.9/4.0 Northeastern University (CN) <i>School of Computer Science and Engineering</i> B.E. in Telecommunications	Aug. 2017 - Present Sept. 2013 - June 2017
SKILLS	Experience : deep learning, computer vision, domain adaptation, multi-modal data modeling Programming : Python, PyTorch, MATLAB, C, C++	
APPOINTMENTS	Research Assistant , University of Kentucky, Lexington, KY • Multi-domain semantic segmentation and depth estimation for unmanned aerial systems. • Explored deep learning on astrophysics using imbalanced multi-modal data. • Classification, detection, segmentation, and calibration on 2D and 3D medical images. Teaching Assistant , University of Kentucky, Lexington, KY • CS215 : Introduction to Program Design, Abstraction and Problem Solving ×3 • CS216 : Introduction to Software Engineering Techniques ×2 • CS371 : Introduction to Computer Networking ×1	May 2019 - Present Jan. 2018 - May 2021
CONFERENCE PUBLICATIONS	(See Google Scholar for the full list.) <ol style="list-style-type: none">1. X. Xing, G. Liang, Yu Zhang, S. Khanal, A. Lin, N. Jacobs. “ADVIT : Vision Transformer on Multi-modality PET Images for Alzheimer Disease Diagnosis”. In <i>IEEE International Symposium on Biomedical Imaging (ISBI)</i>, 2022.2. Yu Zhang, G. Liang, N. Jacobs. “Dynamic Feature Alignment for Semi-supervised Domain Adaptation”. In <i>British Machine Vision Conference (BMVC)</i>, 2021. arXiv3. G. Liang, X. Xing, L. Liu, Yu Zhang, Q. Ying, A. Lin, and N. Jacobs. “Alzheimer’s Disease Classification Using 2D Convolutional Neural Networks”. In <i>IEEE Engineering in Medicine & Biology Society (EMBC)</i>, 2021. Link4. Yu Zhang, G. Liang, Y. Su, N. Jacobs. “Multi-Branch Attention Networks for Classifying Galaxy Clusters”. In <i>International Conference on Pattern Recognition (ICPR)</i>, 2020. Link5. G. Liang, Yu Zhang, X. Wang, N. Jacobs. “Improved Trainable Calibration Method for Neural Networks on Medical Imaging Classification”. In <i>British Machine Vision Conference (BMVC)</i>, 2020. arXiv6. G. Liang, X. Wang, Yu Zhang, N. Jacobs. “Weakly-Supervised Self-Training for Breast Cancer Localization”. In <i>IEEE Engineering in Medicine & Biology Society (EMBC)</i>, 2020. Link7. Yu Zhang, X. Wang, H. Blanton, G. Liang, X. Xing, N. Jacobs. “2D Convolutional Neural Networks for 3D Digital Breast Tomosynthesis Classification”. In <i>IEEE International Conference of Bioinformatics and Biomedicine (BIBM)</i>, 2019. arXiv8. G. Liang, X. Wang, Yu Zhang, X. Xing, H. Blanton, T. Salem, N. Jacobs. “Joint 2D-3D Breast Cancer Classification”. In <i>IEEE International Conference of Bioinformatics and Biomedicine (BIBM)</i>, 2019. arXiv	

JOURNAL
PUBLICATIONS

9. G. Liang, C. Greenwell, **Yu Zhang**, X. Wang, R. Kavuluru, N. Jacobs. "Contrastive Cross-Modal Pre-Training : A General Strategy for Small Sample Medical Imaging". In *IEEE Journal of Biomedical and Health Informatics*, 2021. [arXiv](#)
10. Y. Su, **Yu Zhang**, G. Liang, J. A. ZuHone, D. J. Barnes, N. B. Jacobs, M. Ntampaka, W. R. Forman, R. P. Kraft, P. E. J. Nulsen, C. Jones, E. Roediger. "A deep learning view of the census of galaxy clusters in IllustrisTNG". In *Monthly Notices of the Royal Astronomical Society*, 2020. [arXiv](#)
11. X. Wang, G. Liang, **Yu Zhang**, H. Blanton, Z. Bessinger, N. Jacobs. "Inconsistent Performance of Deep Learning Models on Mammogram Classification". In *Journal of the American College of Radiology*, 2020. [Link](#)

WORKSHOP
PUBLICATIONS

12. U. Rafique, **Yu Zhang**, B. Brodie, N. Jacobs. "Unifying Guided and Unguided Outdoor Image Synthesis". In *CVPR Workshop : NTIRE 2021*. [Link](#)
13. G. Liang, S. Lin, **Yu Zhang**, Y. Su, Nathan Jacobs. "Optical Wavelength Guided Self-Supervised Feature Learning For Galaxy Cluster Richness Estimate". In *NeurIPS Workshop : Machine Learning and Physical Sciences*, 2020. [arXiv](#)
14. G. Liang, **Yu Zhang**, N. Jacobs. "Neural Network Calibration for Medical Imaging Classification Using DCA Regularization". In *ICML Workshop : Uncertainty and Robustness in Deep Learning*, 2020. [Link](#)
15. **Yu Zhang**, G. Liang, T. Salem, N. Jacobs. "Defense-PointNet : Protecting PointNet Against Adversarial Attacks". In *IEEE BigData Workshop : The Next Frontier of Big Data From LiDAR*, 2019. [arXiv](#)

ABSTRACTS

16. **Yu Zhang**, G. Liang, N. Jacobs, X. Wang. "Unsupervised Domain Adaptation for Mammogram Image Classification : A Promising Tool for Model Generalization". In *Conference on Machine Intelligence in Medical Imaging*, 2019. [arXiv](#)
17. G. Liang, **Yu Zhang**, J. Liu, N. Jacobs, X. Wang. "Training Deep Learning Models as Radiologists : Breast Cancer Classification Using Combined Whole 2D Mammography and Full Volume Digital Breast Tomosynthesis". In *Radiological Society of North America 105th Scientific Assembly and Annual Meeting*, 2019.

TALKS

- "Defense-PointNet : Protecting PointNet Against Adversarial Attacks", Dec. 2019, IEEE BigData LiDAR Workshop, Los Angeles, CA
- "Unsupervised Domain Adaptation for Mammogram Image Classification : A Promising Tool for Model Generalization", Sep. 2019, C-MIMI, Austin, TX

AWARDS

- Conference Travel Grant, University of Kentucky, 2019
- ATS Fellowship, University of Kentucky, 2017-2018

SERVICE

- Reviewer for IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
- Reviewer for IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
- Reviewer for IEEE Winter Conference on Applications of Computer Vision 2020, 2022
- Reviewer for The British Machine Vision Conference 2020, 2021

MEMBERSHIPS

- Institute of Electrical and Electronics Engineers (IEEE), Student Member
- Society for Imaging Informatics in Medicine (SIIM), Student Member