Yu Zhang

PERSONAL INFORMATION

Department of Computer Science
Boise State University
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APPOINTMENTS		
Boise State University		Boise, ID
Department of Computer Science		*July 2025 - Present*
Tenure-Track Assistant Professor		
Bastian Solutions, a Toyota Automated Logistics company		Boise, ID
Machine Learning Engineer II		*March 2023 - July 2025*
Siemens Healthineers		Philadelphia, PA
Image Analytics Intern		*May 2022 - Aug. 2022*

EDUCATION		
University of Kentucky		Lexington, KY
Department of Computer Science		*Aug. 2017 - March 2023*
Ph.D. in Computer Science		
Advisor : Nathan Jacobs (now w/ Washington University in St. Louis)		
Northeastern University		Shenyang, China
School of Computer Science and Engineering		*Sept. 2013 - June 2017*
B.E. in Communication Engineering		

RESEARCH AREAS

Computer Vision, Continual Learning, Domain Adaptation, Model Efficiency, Robotics, Medical Imaging, Remote Sensing, Digital Twins, AI for Interdisciplinary Sciences

PUBLICATIONS BY YEAR

(See Google Scholar for the full list.)

2026

[1] Ahmad Elallaf, **Yu Zhang**, Yuktha Priya Masupalli, Jeong Yang, Yang Lee, Zechun Cao, Gongbo Liang. "MedProbCLIP : Probabilistic Adaptation of Vision-Language Foundation Model for Reliable Radiograph-Report Retrieval." In *Winter Conference on Applications of Computer Vision (WACV) Workshop on Large Foundation Models in Biology and Biomedicine, 2026.* (**Acceptance Rate : 26.7%**) Link

2025

[2] **Yu Zhang**. "From Static Domain Adaptation to State-Adaptive Perception in Embodied Agents." In *NeurIPS 2025 Workshop on Space in Vision, Language, and Embodied AI.* Link

[3] G. Liang, X. Xing, **Yu Zhang**. "Addressing trust and safety challenges in neural network-powered modern AI : A call for broader awareness and action." In *CAE in Cybersecurity Symposium*, 2025.

2023

[4] Z. Xiong, F. Qiao, **Yu Zhang**, N. Jacobs. "StereoFlowGAN : Co-training for Stereo and Flow with Unsupervised Domain Adaptation." In *British Machine Vision Conference (BMVC)*, 2023. Link

[5] **Yu Zhang**, M. Rafique, G. Christie, N. Jacobs. "CrossAdapt : Cross-Scene Adaptation for Multi-Domain Depth Estimation." In *International Geoscience and Remote Sensing Symposium (IGARSS)*, 2023. Link

[6] **Yu Zhang**, M. Rafique, N. Jacobs. "CrossSeg : Cross-Scene Few-Shot Aerial Segmentation using Probabilistic Prototypes." In *International Geoscience and Remote Sensing Symposium (IGARSS)*, 2023. Link

[7] X. Xing, M. Rafique, G. Liang, H. Blanton, **Yu Zhang**, C. Wang, N. Jacobs, A. Lin. "Efficient Training on Alzheimerâs Disease Diagnosis with Learnable Weighted Pooling for 3D PET Brain Image Classification." In *Electronics*, 2023. Link

2022

[8] 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 *IEEE International Symposium on Biomedical Imaging (ISBI)*, 2022. Link

[9] X. Xing, C. Peng, **Yu Zhang**, A. Lin, N. Jacobs. "AssocFormer : Association Transformer for Multi-label Classification." In *British Machine Vision Conference (BMVC)*, 2022. Link

[10] S. Lin, Y. Su, G. Liang, Y. Zhang, N. Jacobs, **Yu Zhang**. "Estimating Cluster Masses from SDSS Multi-band Images with Transfer Learning." In *Monthly Notices of the Royal Astronomical Society (MNRAS)*, 2022. Link

2021

[11] **Yu Zhang**, G. Liang, N. Jacobs. "Dynamic Feature Alignment for Semi-supervised Domain Adaptation." In *British Machine Vision Conference (BMVC)*, 2021. Link

[12] G. Liang, X. Xing, L. Liu, **Yu Zhang**, Q. Ying, A. Lin, N. Jacobs. "Alzheimer's Disease Classification Using 2D Convolutional Neural Networks." In *IEEE Engineering in Medicine & Biology Society (EMBC)*, 2021. Link

[13] U. Rafique, **Yu Zhang**, B. Brodie, N. Jacobs. "Unifying Guided and Unguided Outdoor Image Synthesis." In *CVPR Workshop* : NTIRE 2021. Link

[14] 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 (JBHI)*, 2021. Link

2020 AND BEFORE

[15] **Yu Zhang**, G. Liang, Y. Su, N. Jacobs. "Multi-Branch Attention Networks for Classifying Galaxy Clusters." In *International Conference on Pattern Recognition (ICPR)*, 2020. Link

[16] G. Liang, **Yu Zhang**, X. Wang, N. Jacobs. "Improved Trainable Calibration Method for Neural Networks on Medical Imaging Classification." In *British Machine Vision Conference (BMVC)*, 2020. arXiv

[17] G. Liang, X. Wang, **Yu Zhang**, N. Jacobs. "Weakly-Supervised Self-Training for Breast Cancer Localization." In *IEEE Engineering in Medicine & Biology Society (EMBC)*, 2020. Link

[18] Y. Su, **Yu Zhang**, G. Liang, J. A. ZuHone, D. J. Barnes, N. B. Jacobs, et al. "A deep learning view of the census of galaxy clusters in IllustrisTNG." In *MNRAS*, 2020. arXiv

[19] X. Wang, G. Liang, **Yu Zhang**, H. Blanton, Z. Bessinger, N. Jacobs. "Inconsistent Performance of Deep Learning Models on Mammogram Classification." In *JACR*, 2020. Link

[20] G. Liang, S. Lin, **Yu Zhang**, Y. Su, N. Jacobs. "Optical Wavelength Guided Self-Supervised Feature Learning For Galaxy Cluster Richness Estimate." In *NeurIPS Workshop : Machine Learning and Physical Sciences*, 2020. arXiv

[21] 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

[22] **Yu Zhang**, X. Wang, H. Blanton, G. Liang, X. Xing, N. Jacobs. "2D Convolutional Neural Networks for 3D Digital Breast Tomosynthesis Classification." In *IEEE International Conference of Bioinformatics and Biomedicine (BIBM)*, 2019. arXiv

[23] G. Liang, X. Wang, **Yu Zhang**, X. Xing, H. Blanton, T. Salem, N. Jacobs. "Joint 2D-3D Breast Cancer Classification." In *BIBM*, 2019. arXiv

[24] **Yu Zhang**, G. Liang, T. Salem, N. Jacobs. "Defense-PointNet : Protecting PointNet Against Adversarial Attacks." In *IEEE International Conference on Big Data (Big Data)*, 2019. Link

[25] **Yu Zhang**, G. Liang, N. Jacobs, X. Wang. "Unsupervised Domain Adaptation for Mammogram Image Classification." In *Conference on Machine Intelligence in Medical Imaging*, 2019. arXiv

[26] 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 *RSNA*, 2019.

TEACHING	**Boise State University**

TEACHING **Boise State University**
Instructor
- CS 334 : Algorithms of Machine Learning — *Spring 2026*
- CS 233 : Essentials of Data Science — *Fall 2025*

University of Kentucky
Teaching Assistant — *Jan. 2018 - Dec. 2022*
- CS215 : Introduction to Program Design, Abstraction and Problem Solving — ×2
- CS216 : Introduction to Software Engineering Techniques — ×2
- CS371 : Introduction to Computer Networking — ×1

MENTORING **Graduate Committees (as regular member or external examiner)**

1. Zavareh Bozorgasl, PhD in ECE @ Boise State
   Chair : Hao Chen
   Dissertation : Communication-Efficient Federated Learning

2. Aayushi Rajput, PhD in Computing @ Boise State
   Chair : Steven Cutchin
   Dissertation : Advancing Perceptual Training in Arts Education through Immersive Extended Reality Systems

3. Enoch Levandovsky, PhD in Computing @ Boise State
   Chair : Casey Kennington
   Dissertation : Training Large Language Models for Human Robot Interaction with Reinforcement Learning

4. Isuru De Zoysa, PhD in Computing @ Boise State
   Chair : Hao Chen
   Dissertation : Federated Causal Discovery with DAG

5. Amirhossein Montazeri, PhD in Computing @ Boise State
   Chair : Mojtaba Sadegh
   Dissertation : Data-centric solutions for soil burn severity assessment

6. Anup Majumder, PhD in Computing @ Boise State
   Chair : Tim Andersen
   Dissertation : Determination of Vitamin C Concentration Using NIR Spectroscopy and Chemometric Modeling

7. Maqsudur Rahman, PhD in Computing @ Boise State
   Chair : Jun Zhuang
   Dissertation : Quantum Computing for Medical Imaging

8. Anh Bui, Masters in Computer Science @ Boise State
   Chair : Casey Kennington
   Thesis : Using agentic AI to enhance the Cozmo robot to autonomously explore unknown environments

INVITED TALKS
- Lightning Talk : "Computer vision and its applications", Jan. 2026, for Idaho National Laboratory.
- Lightning Talk : "Computer Vision, Robotics, and Agentic AI", October 2025, at Boise State University.
- "The Integration of Computer Vision and Robotics : Emerging Challenges and Real-World Applications", October 2025, at Texas A&M University-San Antonio.
- "CrossSeg : Cross-Scene Few-Shot Aerial Segmentation using Probabilistic Prototypes", July 2023, at IEEE International Geoscience and Remote Sensing Symposium (IGARSS), Pasadena, CA.
- "Defense-PointNet : Protecting PointNet Against Adversarial Attacks", Dec. 2019, at IEEE BigData LiDAR Workshop, Los Angeles, CA.
- "Unsupervised Domain Adaptation for Mammogram Image Classification : A Promising Tool for Model Generalization", Sep. 2019, at C-MIMI, Austin, TX.

Service

- Reviewer for Computer Vision and Pattern Recognition Conference (CVPR), 2026
- Reviewer for NeurIPS 2025 Workshop on Space in Vision, Language, and Embodied AI.
- Reviewer for Asian Conference on Computer Vision (ACCV), 2024
- Reviewer for European Conference on Computer Vision (ECCV), 2024, 2026
- Program Committee Member for ACM SIGSPATIAL -GeoAI, 2023
- Reviewer for International Conference on Computer Vision (ICCV), 2023
- 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 Winter Conference on Applications of Computer Vision (WACV) 2020, 2022, 2023
- Reviewer for The British Machine Vision Conference (BMVC) 2020, 2021, 2022, 2023, 2025
- Reviewer for IEEE Conference on Artificial Intelligence (CAI), 2023
- Reviewer for Imaging Science Journal 2022