Yu Zhang

Personal Information

Ph.D. Student
Department of Computer Science
University of Kentucky
329 Rose Street, Lexington, KY 40506 USA

Homepage : yuzhang03.github.io
Phone : +1(859)420-1076
Email : y.zhang@uky.edu

Education

University of Kentucky *Aug. 2017 - Present*
Ph.D. in Computer Science
Advisor : Nathan Jacobs
GPA : 3.89/4.00

Northeastern University (CN) *Sept. 2013 - June 2017*
School of Computer Science and Engineering
B.E. in Communication Engineering

Skills

Experience : Deep Learning, Machine Learning, Computer Vision, Unsupervised Domain Adaptation, Adversarial Attacks, Point Clouds, Astrophysics Data Analysis, Medical Image Analysis
Programming : Python, PyTorch, MATLAB, C, C++, Shell, SQL

Professional experience

Research Assistant, University of Kentucky, Lexington, KY *Summer 2019 - Present*
- Unsupervised domain adaptation for mammogram image classification and segmentation.
- Data augmentation, neural network generalization, and adversarial training for medical images.
- Deep learning on astrophysics data, magnetic field classification/regression on unbalanced dataset.

Teaching Assistant, University of Kentucky, Lexington, KY
- CS216 : Introduction to Software Engineering Techniques *Fall 2019*
- CS215 : Introduction to Program Design, Abstraction and Problem Solving *Spring 2019*
- CS216 : Introduction to Software Engineering Techniques *Fall 2018*
- CS371 : Introduction to Computer Networking *Spring 2018*

Journal Publications

1. 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.

Conference Publications

2. G. Liang, X. Wang, **Yu Zhang**, N. Jacobs. "Weakly-Supervised Self-Training for Breast Cancer Localization". In *Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, 2020.
3. **Yu Zhang**, G. Liang, T. Salem, N. Jacobs. "Defense-PointNet : Protecting PointNet Against Adversarial Attacks". In *IEEE International Conference on Big Data (BigData)*, 2019.
4. **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.
5. G. Liang, X. Wang, **Yu Zhang**, X. Xing, H. Blanton, T. Salem, N. Jacobs. "Joint 2D-3D Breast Cancer Classification". In *IEEE International Conference of Bioinformatics and Biomedicine (BIBM)*, 2019.

Other Publications

6. 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 (RSNA)*, 2019.
7. **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 (C-MIMI)*, 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

- Reviewing for IEEE Winter Conference on Applications of Computer Vision (WACV 2020)
- Reviewing for The British Machine Vision Conference (BMVC 2020)

Memberships

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