

Xiaofan Zhang

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Education

- 8/2013 – Present **University of North Carolina at Charlotte, NC, USA**
Ph.D. Candidate
Department of Computer Science
- 9/2009 – 7/2013 **Beihang University, Beijing, China**
Bachelor of Engineering
Pattern Recognition and Intelligent System of Automation Science
School of Automation Science and Electrical Engineering

Research Interest

Computer vision, medical image analysis, machine learning, fine-grained image recognition

Research Experience

- 5/2016 - 8/2016 **Face Recognition**
Media Analytics, NEC Laboratories America
Mentor: Dr. Kihyuk Sohn
Propose to learn robust features that are invariant to the identification-irrelevant attributes (e.g., expressions, poses) base on triplet network.
- 5/2015 - 8/2015 **Fine-Grained Image Recognition**
Media Analytics, NEC Laboratories America
Mentor: Dr. Feng Zhou, Dr. Yuanqing Lin
1. Proposed a multi-task learning framework to embed structured labels and learn fine-grained feature representations effectively. [CVPR'16]
2. Combined the Spatial Transformer Network (STN) and LSTM for accurate parts detection to boost the performance.
- 8/2013 - present **Large-Scale Image Retrieval for Medical Image Analysis**
Video and Image Analysis Lab, University of North Carolina at Charlotte
Advisor: Dr. Shaoting Zhang
Proposed hashing-based large-scale image retrieval methods to analyze histopathological images, achieving 88.1% classification accuracy within 20 milliseconds, within large medical image databases.
- 7/2012 - 1/2013 **Urine Sediment Analysis**
Imaging and Data Processing for Emerging Markets Group, Siemens Ltd., China Corporate Technology
Mentor: Dr. Tian Shen
Developed a framework to classify particles in urine sediment based on texture features and random forest. Two pending patents.

Publications & Patents

1. Xiaofan Zhang, Feng Zhou, Yuanqing Lin, Shaoting Zhang: *Embedding Label Structures for Fine-grained Feature Representation*. Computer Vision and Pattern Recognition (CVPR), 2016.
2. Xiaofan Zhang, Hang Dou, Tao Ju, Jun Xu, Shaoting Zhang: *Fusing Heterogeneous Features from Stacked Sparse Autoencoder for Histopathological Image Analysis*. IEEE Journal of Biomedical and Health Informatics (JBHI), Volume 20, Issue 5, Pages 1377-1383, 2016.
3. Xiaofan Zhang, Fuyong Xing, Hai Su, Lin Yang, Shaoting Zhang: *High-Throughput Histopathological Image Analysis via Robust Cell Segmentation and Hashing*. Medical Image Analysis (MedIA), Volume 26, Issue 1, Pages 306–315, 2015.
4. Xiaofan Zhang, Hai Su, Lin Yang, Shaoting Zhang: *Fine-Grained Histopathological Image Analysis via Robust Segmentation and Large-Scale Retrieval*. Computer Vision and Pattern Recognition (CVPR), 2015.
5. Xiaofan Zhang, Hai Su, Lin Yang, Shaoting Zhang: *Weighted Hashing with Multiple Cues for Cell-Level Analysis of Histopathological Images*. The 24th biennial international conference on Information Processing in Medical Imaging (IPMI), 2015.
6. Xiaofan Zhang, Wei Liu, Murat Dundar, Sunil Badve, Shaoting Zhang: *Towards Large-Scale Histopathological Image Analysis: Hashing-Based Image Retrieval*. IEEE Transactions on Medical Imaging (TMI), Volume 34, Issue 2, Pages 496-506, 2015.
7. Xiaofan Zhang, Hang Dou, Tao Ju, Shaoting Zhang: *Fusing Heterogeneous Features for the Image-Guided Diagnosis of Intraductal Breast Lesions*. International Symposium on Biomedical Imaging (ISBI), 2015. **Finalist of Best Student Papers**
8. Xiaofan Zhang, Lin Yang, Wei Liu, Hai Su, Shaoting Zhang: *Mining Histopathological Images via Composite Hashing and Online Learning*. International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2014. **Early acceptance rate, ~10%, student travel award.**
9. Xiaofan Zhang, Wei Liu, Shaoting Zhang: *Mining Histopathological Images via Hashing-Based Scalable Image Retrieval*. International Symposium on Biomedical Imaging (ISBI) 2014. **Best Paper Travel Award** (3 out of ~600 submissions)
10. Tian Shen, Juan Xu, and Xiaofan Zhang: *Method and apparatus for processing block to be processed of urine sediment image*. Application No. PCT/US2015/028438, filed, 2015.
11. Tian Shen, Juan Xu, and Xiaofan Zhang: *Method and apparatus for performing block retrieval on block to be processed of urine sediment image*. Application No. PCT/US2015/028441, filed, 2015.

Professional Skills

Proficient in C/C++ and Python

Proficient in Linux

Proficient in deep learning (e.g., CNNs with Caffe; RNNs with TensorFlow)