Tingfeng Li

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RESEARCH INTERESTS

My current research interests lie in zero-shot/few-shot learning, domain adaptation, weakly-supervised learning and reinforcement learning, with their applications to image classification, object detection and real world problems. I'm also interested in video analysis and conditional generative adversarial networks.

EDUCATION

Rutgers University, New Jersey
Ph.D., Computer Science, GPA: 4.0/4.0 Expected Dec, 2022

Shanghai Jiao Tong University, Shanghai, China
M.E., Control Engineering Sep.2015 - Mar.2018

University of Electronic Science and Technology of China, Chengdu, China
B.E, Automation Engineering, GPA: 3.93/4.0 Sep.2011 - Jun.2015

RESEARCH EXPERIENCE

Zero-shot Domain Adaptation for Object Localization Dec.2021 - present

Developing an approach for object localization by synthesizing a new model conditioned on domain descriptor.

Query Object Localization via Transferable Reward Jan.2021 - May.2021

Proposed a reinforcement learning based approach for query object localization by learning transferable reward. Extended to a paper for ICLR 2022 and submitted a patent. In collaboration with **NEC Labs America.**

American Sign Language Recognition Dec.2019 - May.2020

Developed a method to recognize American sign language via multi-scale temporal relational reasoning in videos.

Adaptive Data Transformation Sep.2018 - Apr.2019

Developed a method that learns data transformation automatically and efficiently with limited domain knowledge, which can increase data variance in training and decrease data variance in testing.

Car and Pedestrian Detection by Deep Learning Aug.2016 - May.2017

Proposed an accurate and cost efficient deep CNN network for object detection, which can be used as an important part of automatic driving system. In collaboration with **2012 Labs, Huawei Technologies, China**.

Pedestrian Detection for Traffic Gestures Recognition Aug.2016 - May.2017

Detecting the person with specific traffic gesture on the road by CNN. In collaboration with **BMW, ConnectedDrive Lab, China.**.

WORK EXPERIENCE

Optical Networking+Sensing, NECLA, Princeton, US. Sep.2021 - May.2022

- Zero-shot domain adaptation for object localization.
- Weigh in motion using fiber-optical-sensing signal.
- Manhole events detection using fiber-optical-sensing signal.

Fashion Science, Amazon, Seattle, US. May.2021 - Aug.2021

Created a benchmark dataset and established a baseline framework for fashion related video analysis. Proposed a new application for better customer experience.

Optical Networking+Sensing, NECLA, Princeton, US. May.2020 - Aug.2020

Demonstrated a new application of fiber-optic-sensing and machine learning techniques for vehicle run-off-road events detection to enhance roadway safety and efficiency.

PUBLICATIONS

Tingfeng Li, Shaobo Han, Martin Renqiang Min, Dimitris Metaxas, *Learning Transferable Reward for Query Object Localization with Policy Adaptation,* The International Conference on Learning Representations (ICLR), 2022. (**scored among top 8%**)

Tingfeng Li, Yuheng Chen, Ming-Fang Huang, Shaobo Han, Ting Wang, *Vehicle Run-Off-Road Event Automatic Detection by Fiber Sensing Technology,* OFC 2021.

Zhiqiang Tang, Xi Peng, **Tingfeng Li**, Yizhe Zhu, Dimitris Metaxas, *AdaTransform: Adaptive Data Transformation,* The IEEE International Conference on Computer Vision (ICCV) oral, 2019.

Tingfeng Li, Xu Zhao, *Simultaneous Face Detection and Head Pose Estimation: A Fast and Unified Framework,* Asian Conference on Computer Vision (ACCV), 2018.

Tingfeng Li, Xu Zhao, *Cost Efficient Subcategory-aware CNN for Object Detection,* IEEE International Conference on Image Processing (ICIP), 2017.

INVENTION RECORDS

Temporal Relation Network for Manhole Event Detection using DAS. Dec.2021

Vehicle Overweight Status Detection based on DAS Waveform data. Dec.2021

Learning Ordinal Representations for Deep Reinforcement Learning based Object localization. Mar.2021

Distributed Intelligent SNAP Informatics System. Dec.2020

TECHNICAL SKILLS

Languages : Python, Matlab, C++, C
Tools/Framework : Pytorch, TensorFlow, Caffe

AWARDS

- 2017 Outstanding Student Scholarship, SJTU, top 8 students of the grade
- 2015 Outstanding Undergraduates of UESTC
- 2013 National Scholarship, UESTC, top 2% among 160 students