Kaihong Wang

Boston University, Boston, MA
+1 857-654-5276 ⋄ kaiwkh@bu.edu ⋄ cs-people.bu.edu/kaiwkh/

EDUCATION

Boston University Feb. 2020 - Present
Ph.D., Department of Computer Science
Advisor: Margrit Betke
GPA: 3.88/4.00

Boston University Sep. 2018 - Jan. 2020
M.S., Department of Computer Science
Advisor: Margrit Betke
GPA: 3.93/4.00

South China University Of Technology (SCUT) Sep. 2014 - June 2018
B.S., Department of Software Engineering.
GPA: 3.59/4.00

RESEARCH PROJECTS

Synthetic-to-Real adaptation for Segmentation Boston University
Superviser: Prof. Margit Betke Dec. 2019 - Sep. 2020

- Proposed a domain parameterization method to tackle the Unsupervised Domain Adaptation problem for Semantic Segmentation.
- A bidirectional style transfer is conducted on both the source and target domain to bridge the domain gap as well as perform high-dimensional perturbation for unsupervised learning.
- By incorporating supervised learning on a labeled synthetic dataset and unsupervised learning on an unlabeled real dataset, we enable gradual adaptation from the source to the target domain.
- The method achieves state-of-the-art performance on two commonly used benchmarks, namely SYNTHIA-to-CITYSCAPES and GTA5-to-CITYSCAPES.
- In this project, I was in charge of designing and implementing the paradigm, conducting related experiments, and writing the paper. The corresponding paper accepted by AAAI-2021.

Detecting Occluded Objects Boston University
Superviser: Prof. Margit Betke, Dr. Vitaly Ablavsky Mar. 2019 - Nov. 2019

- Proposed a novel bounding box level embedding mechanism: Semantics-Geometry Embedding. The embedding made it possible to determine whether two heavily overlapping boxes belong to the same object.
- Proposed a new Semantics-Geometry NMS algorithm based on the Semantics-Geometry Embedding. It remarkably improved object detection in scenarios with heavy intra-class occlusions.
- Designed a new object detector: SerialR-FCN. It not only provided the capability to learn the Semantics-Geometry Embedding end-to-end, but also improved object detection accuracy.
- The proposed method achieved state-of-the-art performance on the task of car detection in the benchmark KITTI dataset and the task of pedestrian detection in the CityPersons dataset by improving the detection recall in heavily-occluded scenes.
- Contributed in running experiments and writing paper. The paper was accepted by ECCV 2020.

Kenyan food trend analysis Boston University
Superviser: Prof. Margrit Betke Feb. 2019 - Jul. 2019

- Designed a scraping system to collect posts on Instagram from Kenya and created a food/non-food dataset as well as a multimodal food type dataset with caption.

- Trained a multimodal classifier which takes images along with their corresponding captions as input to identify the type of food in images collected across Kenya.
- Combined with geographical information from posts, conducted social food trend and health analysis on the resulting distribution of food in the country.
- The resulting paper was accepted by MADiMa 2019.

Data mining and information propagating analyzation system in Weibo SCUT
Superviser: Prof. Zhenyu Wang Feb. 2016 - Jun. 2016

- Participated a data mining program that develop an information propagating analysis system in Weibo.
- In charge of information extraction from Weibo using web crawler.

PUBLICATIONS

Jalal M*, **Wang K***, Jefferson S, et al."Scraping Social Media Photos Posted in Kenya and Elsewhere to Detect and Analyze Food Types",Proceedings of the 5th International Workshop on Multimedia Assisted Dietary Management. ACM.

Yang C, Ablavsky V, **Wang K**, et al. "Learning to Separate: Detecting Heavily-Occluded Objects in Urban Scenes", ECCV 2020.

Wang K, Yang C, Betke M. "Consistency Regularization with High-dimensional Non-adversarial Source-guided Perturbation for Unsupervised Domain Adaptation in Segmentation", AAAI 2021.

TEACHING EXPERIENCE

Boston University

- 2020 Fall: CS440 Artificial Intelligence, Teaching Fellow.

PROFESSIONAL ACTIVITIES

- Reviewer of CVPR 2021

AWARDS

Second prize scholarship of South China University Of Technology 2016
Merit Student of South China University Of Technology 2016

SKILLS

Programming: C, C++, Java, Python, LaTeX
Deep Learning: Tensorflow, Pytorch