

ZHUORAN YU

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EDUCATION

Georgia Institute of Technology

August 2018 - August 2020

M.S. in Computer Science

Overall GPA: 4.0

University of Waterloo

Jan 2014 - June 2018

B.Math. in Computer Science and Applied Mathematics

Graduate with Distinction, Dean's Honours List

Arthur Beaumont Memorial Scholarship

RESEARCH INTEREST

Investigations to develop **label-efficient(semi/self/un-supervised learning)** algorithms for complex computer vision tasks such as video and geometric processing.

RESEARCH EXPERIENCE

Student Researcher

May 2020 - Present

Robotics Perception and Learning Lab, Advised by Prof. Zolt Kira

Atlanta, GA

- Proposed a cross-scale consistency loss for semi-supervised object detection
- Designed different approaches to compute the consistency loss for single-stage and two-stage object detectors
- Implemented the proposed method in two popular object detection framework: mmdetection and detectron

Research Intern

May 2019 - December 2019

Emerging Innovation Group(EIG), SenseTime

Shenzhen, China

- Pyramid Convolution: Collaborated with team members to propose a novel head design for single-stage object detectors to preserve scale invariance.
- Scale-integrated Batch Normalization: Proposed a novel method to compute mean and variance across different levels of FPN.
- Scale-Calibrated Training: Proposed a novel algorithm that combines mixed-scale training and scale-specific BN to make CNNs executable at multiple testing resolutions.

Student Researcher

September 2018 - April 2019

Chu Data Lab, Advised by Prof. Xu Chu

Atlanta, GA

- Proposed an unsupervised learning method for error detection and repair with low-rank approximation
- Implemented and published the end-to-end data cleaning system at Sigmod 2019

Undergraduate Research Assistant

September 2018 - April 2019

Database System Group, Advised by Prof. Tamer Ozsu

Atlanta, GA

- Implemented stream graph partitioning algorithms Linear Deterministic Greedy(LDG) and FENNEL
- Evaluated these algorithms with queries of different complexity on 16 computing node

PUBLICATION

Scale Calibrated Training: Improving Generalization of Deep Networks via Scale-Specific Normalization

Zhuoran Yu, Aojun Zhou, Yukun Ma, Yudian Li, Xiaohan Zhang, Ping Luo

- Arxiv Preprint, 2020

Scale-Equalizing Pyramid Convolution for Object Detection

Xinjiang Wang, Shilong Zhang*, Zhuoran Yu, Litong Feng, Wayne Zhang*

- Computer Vision and Pattern Recognition(CVPR), 2020

PIClean: a Probabilistic and Interactive Data Cleaning System

Zhuoran Yu, Xu Chu

- ACM Sigmod Demo Track, 2019

EmotionX-Antenna: An Emotion Detector with Residual GRU and Text CNN

Zhuoran Yu, Yuhong Wang, Zhanhao Liu, Xiang Cheng.

- Tech Report, The 7th International Workshop on Natural Language Processing for Social Media(SocialNLP) @IJCAI 2019

TEACHING

Graduate Teaching Assistant

CS 7643 Deep Learning

January 2020 - December 2020

Atlanta, GA

- Worked as GTA for three consecutive semesters
- Led the development of new assignments from scratch for the course
- Advised students to select topics, make execution plans and analyze experimental results for their projects.

Graduate Teaching Assistant

CS 7641 Machine Learning

January 2019 - May 2019

Atlanta, GA

- Graded students' assignments and exams
- Helped students debug code for assignments

TECHNICAL STRENGTHS

Programming Languages

Python, C++, Java, Matlab, Scheme

Frameworks & Tools

PyTorch, TensorFlow, SLURM,

Areas

Semi-Supervised Learning, Object Detection