Shuhao Fu

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Education

The Hong Kong University of Science and Technology — Hong Kong
B.S. Computer Science and Mathematics GPA: 3.76/4.3 (top 5%) — Sept 2014 - Aug 2019

Johns Hopkins University — Baltimore, MD
Visiting Research Student — Jun 2019 - Dec 2019

- Investigating a domain adaptation method with auxiliary self-supervised training tasks.
- Designing a framework with reasoning ability that speculates occluded parts to achieve better classification accuracy under occlusions.

Swiss Federal Institute of Technology in Zurich — Zurich
Exchange student in Computer Science and Engineering — Sept 2016 - Feb 2017

Experience

Momenta.ai — Beijing
Research Intern — Nov 2017 - May 2018

- Developed different Alignment Networks for car detection, which regresses bounding boxes proposed by Faster R-CNN in a more stable and efficient manner.
- Systematized the evaluation process of Alignment Networks' performances with new criteria based on stability and efficiency.

Microsoft Research Asia — Bejing
Research Intern — Jun 2017 - Nov 2017

- Reimplemented code of Flow-Guided Feature Aggregation in MXNet platform and officially released it.
- Designed an algorithm leveraging color, texture and optical flow to tackle instance segmentation problem in videos with semi-supervised annotation.
- Submitted a paper to CVPR 2018 titled as "Exploiting Optical Flow For Instance-aware Segmentation In Videos" as the first author.

Projects

Attach Resistant Federated Learning — Hong Kong
Supervisor: Qifeng Chen — Sept 2018 - Sept 2019

- Proposed an algorithm with residual-based reweighting that robustly aggregate hundreds of models in federated learning.
- Our approach maintained robust under model poisoning attacks and noisy attacks in variant tasks including NLP and Image Classification.
- Theoretically proved the robustness of our aggregation algorithm.

Undergraduate Research Opportunity Program — Hong Kong
Supervisor: Dit-Yan Yeung — Sept 2018 - Dec 2019

- Utilized Generative Adversarial Network to tackle the crowd counting problem.
- Inspected different loss functions used in Generative Adversarial Networks and adapting the most efficient ones under the setting of crowd counting.

Harvard-HKUST Summer Research Program — Cambridge, MA
Research Student — Jun 2016 - July 2016

- Collaborated with 11 people from both HKUST and Harvard to build a personal electric vehicle.
- Programmed the mainboard of the vehicle and developed an Android App as a speed dashboard.

Awards

University Scholarship	2014 - 2019
Dean's List Student (GPA above 3.7/4.3, top 5%) in	2014-17
Lee Hysan Foundation Exchange Scholarship	2017
HKSAR Government Scholarship Fund – Reaching Out Award	2017

Skills

Programming Languages:	Python, C/C++, Java
Frameworks & Tools:	Pytorch, Caffe, MXNet, TensorFlow, LaTeX, Git, Linux
Languages:	Chinese (Native), English (Professional working proficiency)