XU, Jiarui (Jerry)

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EDUCATION

Hong Kong University of Science and Technology Sept 2015 – Present
BSc in Computer Science and Mathematics | Engineering School **GPA: 3.8/4.3 (CS: 4.0/4.3, Math: 3.9/4.3)**

- Select Honors: S.S. Chern Class of Mathematics; Dean's List; Recruitment Scholarship; Scholarship for Continuing UG Students; HKSAR Government Scholarship Fund; Overseas Experience Scholarship

Washington University in St. Louis Jan 2018 – May 2018
Engineering School | Exchange Program **GPA: 3.9/4.0**

University of California, San Diego June 2019 – Aug 2019
SU Lab, Computer Science and Engineering | Visiting Researcher

RESEARCH EXPERIENCE

University of California, San Diego **La Jolla, USA**
Supervisor: Hao Su *June 2019 – Aug 2019*

Learning to Group: A Bottom-Up Framework for 3D Part Discovery in Unseen Categories (ICLR 2020)

- Co-author of this work.
- Formulation of zero-shot part discovery on a large-scale fine-grained shape segmentation benchmark.
- A learning-based agglomerative clustering framework that learns to do part proposal and grouping from training categories and generalizes to unseen novel categories

Microsoft Research Asia **Beijing, China**
Supervisor: Yue Cao, Han Hu, Stephen Lin *May 2018 – April 2019*

GCNet: Non-local Networks Meet Squeeze-Excitation Networks and Beyond (ICCV 2019 Neural Architects Workshop Best Paper Award, submitted to TPAMI Special Issue)

- Co-first author of this work.
- Re-interpretation and connection of two top popular techniques proposed in CVPR 2018 (Non-local neural networks and SE-Net).
- Unification of these the two techniques into a general framework.
- Better instantiation of the general framework, which is about 50x faster than the non-local neural block, while achieving better accuracy than both techniques (non-local and SE-Net) on several recognition tasks such as ImageNet classification, COCO object detection and Kinetics action recognition.

Spatial-Temporal Relation Network for Multi-Object Tracking (ICCV 2019)

- First author of this work.
- The first coherent and end-to-end framework for similarity measure which combines all of the appearance, motion and interaction cues.
- Properly redesign of feature representation for the tracklet-object pair.
- Achieve the state-of-the-art multi-object tracking (MOT) results on all of the MOT15-17 leaderboards using few bells and whistles.

Hong Kong University of Science and Technology **Hong Kong, China**
Supervisor: Yu-Wing Tai, Chi-Keung Tang *Sep 2017 – Jan 2018*

End-to-End Deep HDR Imaging with Large Foreground Motions (ECCV 2018)

- Second author of this work
- Fast and practical method for HDR image generation.
- The first non-flow-based end-to-end deep framework for high dynamic range imaging.
- State of the art HDR images generation of dynamic scenes without artifacts and ghost.

PUBLICATION

* indicates equal contribution

1. **GCNet: Non-local Networks Meet Squeeze-Excitation Networks and Beyond**
   Yue Cao*, **Jiarui Xu***, Stephen Lin, Fangyun Wei, Han Hu
   International Conference on Computer Vision Workshop on Neural Architects (ICCVW), 2019
   [paper][code, 600+stars] **Best Paper Award**
2. **Spatial-Temporal Relation Networks for Multi-Object Tracking**
   Jiarui Xu, Yue Cao, Zheng Zhang, Han Hu
   International Conference on Computer Vision (ICCV), 2019 [paper]
3. **Deep High Dynamic Range Imaging with Large Foreground Motions**
   Shangzhe Wu, **Jiarui Xu**, Yu-Wing Tai, Chi-Keung Tang
   European Conference on Computer Vision (ECCV), 2018 [paper]
4. **Learning to Group: A Bottom-Up Framework for 3D Part Discovery in Unseen Categories**
   Tiange Luo, Kaichun Mo, Zhiao Huang, **Jiarui Xu**, Siyu Hu, Liwei Wang, Hao Su
   International Conference on Learning Representations (ICLR), 2020 [paper]
5. **Fast Video Object Segmentation with Temporal Aggregation Network and Dynamic Matching**
   Xuhua Huang*, **Jiarui Xu***, Yu-Wing Tai, Chi-Keung Tang
   Under Review

WORKING EXPERIENCE

Microsoft Research Asia **Beijing, China**
Intern in Visual Computing Group *May 2018 – April 2019*

- Researched on image classification, object detection and tracking, action recognition.
- Implemented and maintained group code bases and infrastructures.
- Served as an external contributor of mmdetection with kernel operators like DCN, GCNet.
- Completed research projects submitted to conferences and journals.

Magnum Research Limited **Hong Kong, China**
Intern in Software Develop Team *Sep 2017 – Jan 2018*

- Built both front end and back end infrastructures for quant trading.
- Developed, beatify and maintain the company main web page.
- Designed and built the company resource CMS system.

TFI Digit Limited **Hong Kong, China**
Intern in Video Production Team *June 2017 – August 2017*

- Implemented the automatic subtitle system for product team.
- Integrated various speech to text recognition APIs into video annotation pipeline.
- Developed Meeting tagging iOS application for automatic meeting minutes.

CONTEST

RoboMasters Team of HKUST Robotics Institution **Hong Kong, China**
Senior Embed/Vision System Developer *Nov 2016 – Dec 2017*

- Won the champion in international wildcard game.
- Implemented control algorithm of 5 infantry robots for operators.
- Developed target recognition system for infantry robot with OpenCV.

Big Datathon Competition Team **Hong Kong, China**
Data Developer *Dec 2017*

- Achieved rank of 1st runner up.
- Committed to team work to demonstrate project idea and data.
- Crawled the data from Facebook, Instagram and OpenRice and performed data analyze.

SKILLS

Computers	Python, C++, MATLAB, LATEX, JavaScript, HTML, CSS
Courses	Deep Learning, Computer Vision, Computer Graphic, Operating System
Languages	Mandarin (native), English (fluent), Cantonese (moderate)