YUWEN XIONG

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Homepage ⋄ Google Scholar ⋄ GitHub

EDUCATION

University of Toronto, Toronto, ON, Canada   Jan. 2020 - Present
Ph.D. in Computer Science, GPA: 4.0/4.0
Supervisor: Prof. Raquel Urtasun

University of Toronto, Toronto, ON, Canada   Sept. 2018 - Jan. 2020
MSc. in Computer Science, GPA: 4.0/4.0
Supervisor: Prof. Raquel Urtasun

Zhejiang University, Hangzhou, P.R.China   Sept. 2013 - June 2018
B.Eng. in Computer Science and Technology,
Pursuit Science Class, Chu Kochen Honors College
Overall GPA: 3.75/4.0, Major GPA 3.97/4.0, Rank top 5%
Received waiver for the National College Entrance Exam to enter Zhejiang University from 1st Prize in
National Olympiad in Informatics in Provinces (top 1.8% over 60,000 participants).

National University of Singapore, Visiting Student with Full Scholarship   July 2015 - Aug. 2015

PUBLICATIONS

* below indicates equal contribution

Yuwen Xiong, Mengye Ren, Raquel Urtasun
Self-Supervised Representation Learning from Flow Equivariance
International Conference on Computer Vision (**ICCV**), 2021. (pdf)

Katie Luo*, Sergio Casas*, Renjie Liao, Xinchen Yan, **Yuwen Xiong**, Wenyuan Zeng, Raquel Urtasun
Safety-Oriented Pedestrian Motion and Scene Occupancy Forecasting
International Conference on Intelligent Robots and Systems (**IROS**), 2021. (pdf)

Yuwen Xiong, Mengye Ren, Raquel Urtasun
LoCo: Local Contrastive Representation Learning
Conference on Neural Information Processing Systems (**NeurIPS**), 2020. (pdf)

Jingkang Wang*, Mengye Ren*, Ilija Bogunovic, **Yuwen Xiong**, Raquel Urtasun
Cost-Efficient Online Hyperparameter Optimization
International Conference on Machine Learning (**ICML**),
Workshop on Real World Experiment Design and Active Learning, 2020. (pdf)

Namdar Homayounfar*, **Yuwen Xiong***, Justin Liang*, Wei-Chiu Ma, Raquel Urtasun
LevelSet R-CNN: A Deep Variational Method for Instance Segmentation
European Conference on Computer Vision (**ECCV**), 2020. (pdf)

Jiayuan Gu, Wei-Chiu Ma, Sivabalan Manivasagam, Wenyuan Zeng, Zihao Wang, **Yuwen Xiong**,
Hao Su, Raquel Urtasun
Weakly-supervised Shape Completion with Consistency
European Conference on Computer Vision (**ECCV**), 2020. (**Spotlight**) (pdf)

Justin Liang, Namdar Homayounfar, Wei-Chiu Ma, **Yuwen Xiong**, Rui Hu, Raquel Urtasun
PolyTransform: Deep Polygon Transformer for Instance Segmentation
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2020. (pdf)

Yuwen Xiong*, Mengye Ren*, Renjie Liao, Kelvin Wong, Raquel Urtasun
Deformable Filter Convolution for Point Cloud Reasoning
Conference on Neural Information Processing Systems
Workshop on Sets and Partitions (**NeurIPSW**), 2019. (pdf)

Ajay Jain*, Sergio Casas*, Renjie Liao*, **Yuwen Xiong***, Song Feng, Sean Segal, Raquel Urtasun
Discrete Residual Flow for Probabilistic Pedestrian Behavior Prediction
Conference on Robot Learning (**CoRL**), 2019. **Spotlight** (pdf)

Xiaohui Zeng, Renjie Liao, Li Gu, **Yuwen Xiong**, Sanja Fidler, Raquel Urtasun
DMM-Net: Differentiable Mask-Matching Network for Video Instance Segmentation
International Conference on Computer Vision (**ICCV**), 2019. (pdf)

Yuwen Xiong*, Renjie Liao*, Hengshuang Zhao*, Rui Hu, Min Bai, Ersin Yumer, Raquel Urtasun.
UPSNet: A Unified Panoptic Segmentation Network
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2019. **Oral** 288/5160 (5.6%) (pdf)

Wei-Chiu Ma, Shenlong Wang, Rui Hu, **Yuwen Xiong**, and Raquel Urtasun.
Deep Rigid Instance Scene Flow
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2019. (pdf)

KiJung Yoon, Renjie Liao, **Yuwen Xiong**, Lisa Zhang, Ethan Fetaya, Raquel Urtasun, Richard Zemel, Xaq Pitkow.
Inference in Probabilistic Graphical Models by Graph Neural Networks.
International Conference on Machine Learning (**ICML**)
Workshop on Tractable Probabilistic Modeling, 2019. **Best Paper Award** (pdf)

Renjie Liao*, **Yuwen Xiong***, Ethan Fetaya, Lisa Zhang, KiJung Yoon, Xaq Pitkow, Raquel Urtasun, Richard Zemel.
Reviving and Improving Recurrent Back-Propagation.
International Conference on Machine Learning (**ICML**), 2018. **Full Oral** 212/2473 (8.6%) (pdf)

Jifeng Dai*, Haozhi Qi*, **Yuwen Xiong***, Yi Li*, Guodong Zhang*, Han Hu, Yichen Wei.
Deformable Convolutional Networks.
International Conference on Computer Vision (**ICCV**), 2017. **Oral** 45/2143 (2.1%) (pdf)

Xizhou Zhu, **Yuwen Xiong**, Jifeng Dai, Lu Yuan, Yichen Wei.
Deep Feature Flow for Video Recognition.
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2017. (pdf)

Haochao Ying, Liang Chen, **Yuwen Xiong**, Jian Wu.
PGRank: Personalized Geographical Ranking for Point-of-Interest Recommendation
International World Wide Web Conference (**WWW**), 2016. (pdf)

Haochao Ying, Liang Chen, **Yuwen Xiong**, Jian Wu.
Collaborative Deep Ranking: a Hybrid Pair-wise Algorithm with Implicit Feedback
Pacific Asia Knowledge Discovery and Data Mining (**PAKDD**), 2016. (pdf)

Yuwen Xiong*, Mengye Ren*, Raquel Urtasun
Learning to Remember from a Multi-Task Teacher
Tech report, arXiv, Oct. 2019. (pdf)

RESEARCH EXPERIENCE

Waabi Innovation Inc.   Mar. 2021 - Present
Researcher II   *Toronto, Canada*

Uber ATG Toronto   Mar. 2019 - Feb. 2021
Research Scientist II   *Toronto, Canada*

Uber ATG Toronto   Apr. 2018 - Mar. 2019
Research Scientist I   *Toronto, Canada*

University of Toronto   July 2017 - Apr. 2018
Research Assistant, Advisor: Prof. Raquel Urtasun   *Toronto, Canada*

Microsoft Research Asia   July 2016 - June 2017
Research Intern, Advisor: Senior Researcher, Dr. Jifeng Dai   *Beijing, China*

Zhejiang University Advanced Computing and System Lab   Sept. 2015 - July 2016
Research Assistant, Advisor: Prof. Jian Wu   *Hangzhou, China*

Chinese University of Hong Kong   July 2014 - Aug. 2014
Research Assistant, Advisor: Prof. Michael R. Lyu   *Hong Kong, China*

PROFESSIONAL ACTIVITIES

Conference Reviewer:

- Conference on Neural Information Processing Systems (NeurIPS)   since 2020

- Conference on Computer Vision and Pattern Recognition (CVPR)   since 2020

- European Conference on Computer Vision (ICCV)   2022

- International Conference on Computer Vision (ICCV)   2021

- International Conference on Machine Learning (ICML)   since 2020

- International Conference on Intelligent Robots and Systems (IROS)   2021

- ICML Workshop on Graph Representation Learning and Beyond   2020

- Asian Conference on Computer Vision (ACCV)   2020

- Uncertainty in Artificial Intelligence (UAI)   since 2019

- Association for the Advancement of Artificial Intelligence Conference (AAAI) 2018, 2021

Journal Reviewer:

- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)

- Journal of Machine Learning Research (JMLR)

- International Journal of Computer Vision (IJCV)

- IEEE Transactions on Circuits and Systems for Video Technology (TCSVT);

- IEEE Transactions on Multimedia (TMM);

- Pattern Recognition (PR);

HONORS & AWARDS

NSERC - Canada Graduate Scholarship - Doctorate	2022
Borealis AI Fellowship	2022
CVPR Outstanding Reviewer	2021
Vector Institute Research Grant	2019 - 2021
Best Paper Award, ICML Workshop on Tractable Probabilistic Modeling	2019
ICML Travel Award	2018
1st Prize of Excellent Undergraduate Scholarship (Top 3% in Department)	2016
Top Student of Basic Science Scholarship (25/215)	2014 - 2016
Best Demo (6/20000, On-site), Microsoft Beauty of Programming	2016
2nd Prize of Excellent Undergraduate Scholarship (Top 6% in Department)	2015
Top 1000 over 25000 worldwide participants, Google Code Jam	2014, 2015

PROJECTS

Deformable-ConvNets   April. 2017

· An official implementation of the ICCV 2017 Oral paper Deformable Convolutional Networks;
· Contains 3 state-of-the-art model, DeepLab, R-FCN, Faster R-CNN and their corresponding Deformable ConvNets implementation.
· Source code on GitHub: https://github.com/msracver/Deformable-ConvNets (over 3k stars by now).
· Powering the 1st, 2nd, 3rd place of COCO Challenges 2017 and becoming the essential component for COCO Challenges 2018, 2019 participants.

py-R-FCN   Sept. 2016

· A Python version of R-FCN supporting joint training;
· A reimplementation of the NIPS 2016 paper based on py-faster-rcnn;
· Supports both joint training (1.5x faster than 4 step method) and a new 5-step training method;
· Source code on GitHub: https://github.com/YuwenXiong/py-R-FCN (over 1k stars by now).
· Kaggle The Nature Conservancy Fisheries Monitoring Competition, 1st Place Winner's choice: Winner's interview.

WS-DREAM   Jul. 2014 - Aug. 2014

· A **D**istributed **RE**liability **A**ssessment **M**echanism for **W**eb **S**ervices: https://wsdream.github.io/
· Prototypes have been used by industrial groups in Microsoft, Tencent.
· Worked as a team member to contribute algorithm implementation under https://github.com/wsdream/WS-DREAM