Min Bai

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Education

PhD, Computer Science Jan 2017 - May 2021
University of Toronto, Ontario, Canada, Cumulative GPA: 4.00/4.00
Supervised by Prof. Raquel Urtasun

- Research Focus: Multi-sensor lane detection, panoptic segmentation, multi-object tracking, 3D LiDAR segmentation

MSc., Computer Science Sep 2015 - Jan 2017
University of Toronto, Ontario, Canada, Cumulative GPA: 3.95/4.00
Supervised by Prof. Raquel Urtasun

- Research Focus: Optical flow estimation, instance level segmentation

BASc., Electrical Engineering Sep 2008 - May 2013
University of Waterloo, Ontario, Canada, Cumulative GPA: 93% (3.94/4.00)

Selected Publications

- Z. Zhang, **M. Bai**, E. Li, *Self-Supervised Pretraining for Large-Scale Point Clouds*, accepted at NeuRIPS 2022
- B. Yang, **M. Bai**, M. Liang, W. Zeng, R. Urtasun, *Auto4D: Learning to Label 4D Objects from Sequential Point Clouds*, submitted to IROS 2021
- **M. Bai**, S. Wang, K. Wong, E. Yumer, R. Urtasun, *Non-Parametric Memory for Spatio-Temporal Segmentation of Construction Zones for Self-Driving*, submitted to IROS 2019.
- **M. Bai***, G. Mattyus*, N. Homayounfar, S. Wang, S. K. Lakshmikanth, R. Urtasun, *Deep Multi-Sensor Lane Detection*, in IROS 2018. * denotes equal contributions.
- S. Wang, **M. Bai**, G. Mattyus, H. Chu, W. Luo, B. Yang, J. Liang, J. Cheverie, S. Fidler, R. Urtasun, *TorontoCity: Seeing the World with a Million Eyes*, in ICCV 2017 (spotlight).
- **M. Bai**, R. Urtasun, *Deep Watershed Transform for Instance Segmentation*, in CVPR 2017.
- **M. Bai***, W. Luo*, K. Kundu, R. Urtasun, *Exploiting Semantic Information and Deep Matching for Optical Flow*, in ECCV 2016. * denotes equal contributions.

Industry Experience

Applied Scientist
Amazon Web Services, New York, NY June 2021 - Present

- Design and prototype 2D / 3D computer vision algorithms to accelerate creation of high quality labels for autonomous driving perception (object detection, segmentation, lane boundaries, etc)
- Conduct scientific research in 2D / 3D self-supervised learning, domain adaptation, and assistive labeling (see publications)
- Contribute to science expertise of AWS SageMaker Ground Truth team through giving tutorials, talks, technical consultations, and patent filings

Research Scientist
Uber Inc. Advanced Technologies Group, Toronto, Ontario May 2017 - Feb 2021

- Develop and prototype new computer vision and machine learning models for parts of the autonomous-driving software stack (see publications)
- Design and provide guidance for creation and curation of various large scale datasets including 3D lane annotation, 2D / 3D semantic and instance segmentation, construction zones
- Review and write academic publications, and attend conferences

- Assist software engineering team in integrating new technologies into autonomous-driving platform

Wireless Systems Engineer
Apple Inc., Cupertino, CA May 2013 - Jul 2015

- Performed radiated power, receiver sensitivity, and throughput measurements using anechoic chambers, cell emulators, spectrum analyzers, VNAs
- Set up, modified, and maintained anechoic chamber test systems including calibration and verification of measurement antennas, switching paths, test equipment, and software automation suites

Services Conference reviewer for CVPR, ICCV, ECCV, WACV, ICRA, IROS

Skills Python, MATLAB, C++, Pytorch, TensorFlow, scikit-learn, numpy, opencv