Zhile Ren

CONTACT INFORMATION

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RESEARCH INTERESTS

Computer vision: 3D visual scene understanding, 3D scene flow.
Computer graphics: Image manipulation/synthesis.

EDUCATION

Brown University, Providence, RI

Ph.D. Candidate, Computer Science Deaprtment, Sept 2013 – May 2018 (expected)

Advisor: Erik Sudderth

Zhejiang University, Hangzhou, China

B.S. in Statistics, Department of Mathematics, Aug 2009 – Jun 2013

PUBLICATIONS

[1] **Cascaded Scene Flow Prediction using Semantic Segmentation**
Zhile Ren, Deqing Sun, Jan Kautz, Erik Sudderth
International Conference on 3D Vision (**3DV**), 2017 (oral presentation)

[2] **3D Object Detection and Layout Prediction using Clouds of Oriented Gradients**
Zhile Ren, Erik Sudderth
IEEE Computer Vision and Pattern Recognition (**CVPR**), 2016 (oral presentation)

[3] **Robust Graph SLAM in Dynamic Environments with Moving Landmarks**
Lingzhu Xiang, Zhile Ren, Mengrui Ni, Chad Jenkins
International Conference on Intelligent Robots and Systems (**IROS**), 2015

[4] **Transient Attributes for High-Level Understanding and Editing of Outdoor Scenes**
Pierre-Yves Laffont, Zhile Ren, Xiaofeng Tao, Chao Qian, James Hays
ACM Transactions on Graphics (**SIGGRAPH**), 2014

[5] **Image Segmentation by Cascaded Region Agglomeration**
Zhile Ren, Greg Shakhnarovich
IEEE Computer Vision and Pattern Recognition (**CVPR**), 2013

RESEARCH EXPERIENCE

Brown University, Computer Science Department

Research Assistant with **Erik Sudderth** Feb 2014 – Present

- 3D object detection and layout prediction with RGB-Depth camera. (**CVPR** 2016)
- 3D object detection with latent support surfaces (**In submission**)

Research Assistant with **James Hays** Sept 2013 – Feb 2014

- Attribute-based image editing. (**SIGGRAPH** 2014)

NVIDIA Research, Visual Computing group June – Sept 2016/2017

Research Intern with **Deqing Sun**, **Orazio Gallo**, **Ming-Hsuan Yang** and **Jan Kautz**

- Semantic scene flow prediction for autonomous vehicles. (**3DV** 2017)
- Learning multi-frame optical flow using deep neural networks. (**In progress**)

Microsoft Research, Interactive Visual Media group June – Sept 2015

Research Intern with **Dr. Sing Bing Kang** and **Dr. Johannes Kopf**

- Image completion and shadow removal. (**In submission**)

National Laboratory of Pattern Recognition, Beijing, China March – Jul 2013

Research Intern with **Prof. Huai-Yu Wu**

- Agglomerative clustering algorithms for 3D mesh segmentation.

Toyota Technological Institute at Chicago (TTIC), Chicago, IL Jul – Oct 2012

Research Intern with **Prof. Greg Shakhnarovich**

- Agglomerative clustering algorithms for natural image segmentation. (**CVPR** 2013)

INVITED TALKS

Cascaded Scene Flow Prediction using Semantic Segmentation
- International Conference on 3D Vision (**3DV**), October 2017
- Visual Computing Group in **NVIDIA**, October 2017
- Computer Vision Group Seminar in **UC-Irvine**, October 2017

Cascaded Model for Three-Dimensional Scene Understanding
- Image and Video Computing (IVC) Seminar at **Boston University**, December 2016

Semantic Scene Flow Prediction for Autonomous Vehicles
- New England Computer Vision Workshop at **Boston University**, November 2016

3D Object Detection and Layout Prediction using Clouds of Oriented Gradients
- IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), June 2016
- Machine Learning Lunch Seminar at **NVIDIA Research**, June 2016
- Data-driven Computer Vision (CSCI 2951T) at **Brown University**, March 2016
- New England Computer Vision Workshop at **UMass Amherst**, November 2015

Image Segmentation by Cascaded Region Agglomeration
- Midwest Vision Workshop at **UIUC**, September 2012

PROFESSIONAL SERVICES

Journal Reviewer
- Computer Vision and Image Understanding (**CVIU**), 2014
- IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2016

Conference Reviewer
- IEEE International Conference on Computer Vision (**ICCV**), 2015, 2017
- IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2016-18
- European Conference on Computer Vision (**ECCV**), 2016
- Asian Conference on Computer Vision (**ACCV**), 2016
- British Machine Vision Conference (**BMVC**), 2017

Departmental Service
- Organizer of Brown University Machine Learning Reading Group (**MLRG**), 2015-17

TEACHING EXPERIENCE

Teaching Assistant
- CSCI2420: Probablistic Graphical Models, Brown University, Fall 2016.
- CSCI1450: Introduction to Probability and Computing, Brown University, Spring 2015.

PROGRAMMING

C/C++, Matlab, Python

MEDIA COVERAGE

Transform Your Photos with a Magic Word. In **IEEE Spectrum**, Oct 2014.

Don't Like the Weather in Your Photos? Now You Can Change It. In **NBC News**, Aug 2014

Photo editing algorithm changes weather, seasons automatically. In **Brown News**, Aug 2014