

Zhiding Yu

PERSONAL INFORMATION	Tel: (850)567-2583 Email: yzhiding@andrew.cmu.edu	Office: B200, Hamerschlag Hall, Carnegie Mellon Univ. Homepage: http://www.contrib.andrew.cmu.edu/~yzhiding/
RESEARCH INTERESTS	Deep Learning, Similarity Representation and Structured Prediction, with their applications to Scene Parsing, Image Segmentation, Object Detection and Traffic Scene Understanding.	
PROGRAMMING SKILLS	C/C++, Python, Matlab, OpenCV, Caffe, Objective C	
EDUCATION	Carnegie Mellon University (CMU) Ph.D. Electrical & Computer Eng. (Advisor: Vijayakumar Bhagavatula)	Pittsburgh, PA 2012 - Present
	Hong Kong University of Science & Technology (HKUST) M.Phil. Electronic & Computer Eng. (Advisor: Oscar C. Au)	Hong Kong 2009 - 2012
	South China University of Technology (SCUT) B.Eng. Information Engineering (Talented Student Program)	Guangzhou, China 2005 - 2008
WORK EXPERIENCE	Mitsubishi Electric Research Laboratories Research Intern, CV Group (Mentor: Srikumar Ramalingam, Ming-Yu Liu) <ul style="list-style-type: none">• Intern Project: Deep category-aware semantic edge detection• Proposed an end-to-end deep semantic edge learning framework• State-of-the-art performance on SBD and Cityscapes dataset• One paper accepted to CVPR 2017	Boston, MA Oct 2016 - Nov 2016
	Microsoft Research Research Intern, MIC Group (Mentor: Cha Zhang) <ul style="list-style-type: none">• Intern Project: Deep CNN based static facial expression recognition• Work integrated to Emotion Recog API under Project Oxford (Media Coverage)• Participated and won 2nd Place at the EmotiW-SFEW Challenge 2015• Full-length paper accepted to ACM-ICMI 2015 as Oral	Redmond, WA May 2015 - Aug 2015
	Adobe Research Research Intern, CV Group (Mentor: Gregg Wilensky) <ul style="list-style-type: none">• Intern Project: Graph cut pixel selection and voice-based editing for PixelTone	San Jose, CA Jun 2013 - Aug 2013
HONORS & AWARDS	<ul style="list-style-type: none">• First Runner Up, EmotiW-SFEW Challenge, ACM-ICMI• Best Paper Award, WACV 2015• Best Student Paper Award, ISCSLP 2014• CVPR Travel Grant• Carnegie Institute of Technology Dean's Tuition Fellowship, CMU• HKTIIT Post-Graduate Excellence Scholarship, HKUST• HKTIIT Post-Graduate Excellence Scholarship, HKUST• Postgraduate Studentship, HKUST,	2015 2015 2014 2014 2012 2012 2010 2009-2012
SELECTED PUBLICATIONS	Journal Paper <ol style="list-style-type: none">1. Zhiding Yu, Oscar C. Au et al., "An Adaptive Unsupervised Approach toward Pixel Clustering and Color Image Segmentation." <i>Pattern Recognition (PR)</i>, 2010, 43. Conference Paper <ol style="list-style-type: none">1. Zhiding Yu, Chen Feng, Ming-Yu Liu, Srikumar Ramalingam, "CASENet: Deep Category-Aware Semantic Edge Detection." <i>IEEE Conf. on Comp Vision and Pattern Recognition (CVPR)</i>, 2017.2. Weiyang Liu, Yandon Wen, Zhiding Yu, Ming Li, Bhiksha Raj, Le Song, "SphereFace: Deep Hypersphere Embedding for Face Recognition." <i>IEEE Conf. on Comp Vision and Pattern Recognition (CVPR)</i>, 2017.3. Zhiding Yu, Weiyang Liu, Wenbo Liu, Yingzhen Yang, Ming Li, B.V.K. Vijaya Kumar, "On Order-Constrained Transitive Distance Clustering." <i>AAAI Conf. on Artificial Intelligence (AAAI)</i>, 2016.	

4. Weiyang Liu, Yandong Wen, **Zhiding Yu**, Meng Yang, "Large-Margin Softmax Loss for Convolutional Neural Networks." *Int. Conf. on Machine Learning (ICML)*, 2016. (Oral)
5. **Zhiding Yu**, Cha Zhang, "Image based Static Facial Expression Recognition with Multiple Deep Network Learning." *ACM Int. Conf. on Multimodal Interaction (ICMI)*, 2015. (Full Paper, Oral)
6. **Zhiding Yu**, Weiyang Liu, Wenbo Liu, Xi Peng, Zhuo Hui, B.V.K. Vijaya Kumar, "Generalized Transitive Distance with Minimum Spanning Random Forest." *Int. Joint Conf. on Artificial Intelligence (IJCAI)*, 2015. (Long Oral)
7. **Zhiding Yu**, Wende Zhang, B.V.K.Vijaya Kumar, Dan Levi, "Structured Hough Voting for Vision-based Highway Border Detection." *IEEE Winter Conf. on Applications of Computer Vision (WACV)*, 2015. (**Best Paper Award**)
8. **Zhiding Yu**, Chunjing Xu et al., "Transitive Distance Clustering with K-Means Duality." *IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2014.
9. **Zhiding Yu**, Ang Li, Oscar C. Au, Chunjing Xu, "Bag of Textons for Image Segmentation via Soft Clustering and Convex Shift." *IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2012.
10. **Zhiding Yu**, Chunjing Xu, Jianzhuang Liu, Oscar C. Au, Xiaou Tang, "Automatic Object Segmentation from Large Scale 3D Urban Point Clouds through Manifold Embedded Mode Seeking." *ACM Multimedia (ACM-MM)*, 2011.
11. **Zhiding Yu**, Oscar C. Au, Ketan Tang, Chunjing Xu, "Nonparametric Density Estimation on A Graph: Learning Framework, Fast Approximation and Application in Image Segmentation." *IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2011.

Technical Report

1. **Zhiding Yu**, Véronique Prinet, B.V.K.Vijaya Kumar, Jinsong Wang, "Improving Highway Border and Shoulder Localization with Layered Feature Learning." GM Technical Report, 2016.
2. **Zhiding Yu**, Wende Zhang, B.V.K.Vijaya Kumar, Dan Levi, "Structured Hough Voting for Vision-based Highway Border and Shoulder Detection." GM Technical Report, 2014.
3. **Zhiding Yu**, Wende Zhang, B.V.K.Vijaya Kumar, "Replacing Inference with Detections: Fast Conditional Random Field Framework for Shadow-Robust Clear Path Detection." GM Technical Report, 2013.

Thesis Paper

1. **Zhiding Yu**, Thesis Committee: Oscar C. Au, Long Quan and Chin-Tau Lee, "Graph Embedding and Arbitrarily Shaped Clustering for Unsupervised Image Segmentation." *Master of Philosophy Thesis, Hong Kong University of Science and Technology*, 2012.

RESEARCH PROJECTS	<ul style="list-style-type: none"> ● Visual scene understanding for autonomous driving (CMU/GM) Sep. 2012 - Present ● Deep category-aware semantic edge detection (MERL) Oct. 2016 - Nov. 2016 ● Deep CNN based static facial expression recognition (Microsoft) May 2015 - Aug 2015 ● Graph cut pixel selection & voice-based editing for PixelTone (Adobe) Jun 2013 - Aug 2013 ● Head pose estimation for active driving safety (CMU/GM) Sep 2011 - Mar 2012 ● Large scale 3D point cloud object segmentation (SIAT) Jan 2011 - Jul 2011
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ACADEMIC SERVICES	<ul style="list-style-type: none"> ● TPC Member, IJCAI'17 ● Reviewer, NIPS'16, AAAI'16, WACV'15/16, CVPR'12, T-PAMI, T-IP, T-MM, T-NNLS, T-CSVT ● Member of director board and organizing committee, Vision And Learning SEminar (VALSE) Online
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COURSES & TEACHING	<p>Ph.D. Courses Taken:</p> <table border="0" style="width: 100%;"> <tr> <td>16-720 Computer Vision (A)</td> <td>18-794 Pattern Recognition Theory (A)</td> </tr> <tr> <td>18-799 Comp. Sensing & Sparse Opt. (A)</td> <td>16-824 Learning Based Methods in Vision (A)</td> </tr> <tr> <td>10-708 Probabilistic Graphical Models (A)</td> <td>10-701 Machine Learning (A-)</td> </tr> <tr> <td>10-725 Convex Optimization (Audit)</td> <td></td> </tr> </table> <p>Teaching Assistant:</p> <ul style="list-style-type: none"> 11-755/18-797 Machine Learning for Signal Processing (Fall 2015, Bhiksha Raj) 11-755/18-797 Machine Learning for Signal Processing (Fall 2014, Bhiksha Raj) 	16-720 Computer Vision (A)	18-794 Pattern Recognition Theory (A)	18-799 Comp. Sensing & Sparse Opt. (A)	16-824 Learning Based Methods in Vision (A)	10-708 Probabilistic Graphical Models (A)	10-701 Machine Learning (A-)	10-725 Convex Optimization (Audit)	
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