

Work Experience

- 11/2017 - Present **ZJU100 Young Professor**, Zhejiang University
National Key Lab of CAD&CG, College of Computer Science
- 2/2014 - 10/2017 **Postdoctoral Researcher**, University of Pennsylvania
Department of Computer and Information Science, Advisor: Kostas Daniilidis
- 9/2013 - 12/2013 **Research Associate**, The Hong Kong University of Science and Technology
Department of Electronic and Computer Engineering, Advisor: Weichuan Yu

Education

- 9/2008 - 8/2013 **Ph.D. in Electronic and Computer Engineering**
The Hong Kong University of Science and Technology, Advisor: Weichuan Yu
Thesis: Low-Rank Modeling in Image Analysis, Highest grade in thesis defense
- 9/2004 - 6/2008 **Bachelor in Information Engineering**
Zhejiang University, Hangzhou, China, Advisor: Huafeng Liu
GPA ranking: Top 3%, Graduated with the first-class honor

Visiting Experience

- 3/2012 - 6/2012 **Visiting Student**, Yale University
Image Processing and Analysis Group, Host: James Duncan

Selected Awards

- 1000 Talents Plan Professorship for Young Talents, Government of China, 2017
Post-Graduate Excellent Scholarships, HK Telecom Institute of Info. Tech., 2013
Travel Award, Doctoral Consortium at CVPR, 2013
Overseas Research Award, HKUST School of Engineering, 2012
National Scholarship, Ministry of Education of China, 2007
First-Class Excellent Student Scholarship, Zhejiang University, 2007

Research Interests

- Areas **Computer vision, machine learning, optimization** with applications in **robotics** and **biomedical data analysis**
- Topics 3D object recognition and reconstruction
Image-based human motion capture
Image matching and data association
Image and video segmentation
Sparse and low-rank models for high-dimensional data analysis

Publications

Vision and Robotics

- ICCV 2017 R. Tron, **X. Zhou**, E. Carlos, K. Daniilidis. Fast Multi-Image Matching via Density-Based Clustering. International Conference on Computer Vision (ICCV), 2017.
- CVPR 2017 G. Pavlakos, **X. Zhou**, K. Derpanis, K. Daniilidis. Coarse-to-Fine Volumetric Prediction for Single-Image 3D Human Pose. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017.
- CVPR 2017 G. Pavlakos, **X. Zhou**, K. Derpanis, K. Daniilidis. Harvesting Multiple Views for Markerless 3D Human Pose Annotations. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017.
- ICRA 2017 G. Pavlakos, **X. Zhou**, A. Chan, K. Derpanis, K. Daniilidis. 6-DoF Object Pose from Semantic Keypoints. IEEE International Conference on Robotics and Automation (ICRA), 2017.
- ICRA 2017 S. Leonardos, **X. Zhou**, K. Daniilidis. Distributed Consistent Data Association. IEEE International Conference on Robotics and Automation (ICRA), 2017.
- PAMI 2016 **X. Zhou**, M. Zhu, S. Leonardos, K. Daniilidis. Sparse Representation for 3D Shape Estimation: A Convex Relaxation Approach. IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), in press, 2017.
- CVPR 2016 **X. Zhou**, M. Zhu, S. Leonardos, K. Derpanis, K. Daniilidis. Sparseness Meets Deepness: 3D Human Pose Estimation from Monocular Video. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2016.
- CVPRW 2016 R. Tron, **X. Zhou**, K. Daniilidis. A Survey on Rotation Optimization in Structure from Motion. International Workshop on Differential Geometry in Computer Vision and Machine Learning, IEEE Conference on Computer Vision and Pattern Recognition Workshops (CVPRW), 2016.
- ICRA 2016 S. Leonardos, **X. Zhou**, K. Daniilidis. Articulated Motion Estimation from a Monocular Image Sequence Using Spherical Tangent Bundles. IEEE International Conference on Robotics and Automation (ICRA), 2016.
- ICCV 2015 **X. Zhou**, M. Zhu, and K. Daniilidis. Multi-image Matching via Fast Alternating Oral Minimization. International Conference on Computer Vision (ICCV), 2015. **Oral presentation.**
- ICCV 2015 M. Zhu*, **X. Zhou***, and K. Daniilidis. Single Image Pop-Up from Discriminatively Learned Parts. International Conference on Computer Vision (ICCV), 2015. *Equal contribution.
- CVPR 2015 **X. Zhou**, S. Leonardos, X. Hu, and K. Daniilidis. 3D Shape Estimation from 2D Oral Landmarks: A Convex Relaxation Approach. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2015. **Oral presentation.**
- CSUR 2014 **X. Zhou**, C. Yang, H. Zhao, W. Yu. Low-Rank Modeling and its Applications in Image Analysis. ACM Computing Surveys (CSUR), 47(2): 36, 2014.

The top tier conferences in computer vision are the IEEE Conference on Computer Vision and Pattern Recognition (CVPR) and the IEEE International Conference on Computer Vision (ICCV). Paper acceptance at these conferences is based on a rigorous double-blind review process. These conferences are highly competitive with acceptance rates around 25% and $\leq 3\%$ for oral presentations. Publications at these conferences are considered equivalent to top journal publications. In robotics, the premiere conference is the IEEE International Conference on Robotics and Automation (ICRA). The top journal in computer vision is the IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI) with an impact factor of 6.077.

- PAMI 2013 **X. Zhou**, C. Yang, W. Yu. Moving Object Detection by Detecting Contiguous Outliers in the Low-Rank Representation. *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, 35(3): 597-610, 2013.
- CVPR 2013 **X. Zhou**, X. Huang, J.S. Duncan, W. Yu. Active Contours with Group Similarity. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2013.
- CVPR 2012 **X. Zhou**, C. Yang, W. Yu. Automatic Mitral Leaflet Tracking by Outlier Detection in the Low-Rank Representation. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2012.
- Under Review **X. Zhou**, M. Zhu, G. Pavlakos, S. Leonardos, K. Derpanis, K. Daniilidis. MonoCap: Monocular Human Motion Capture using a CNN Coupled with a Geometric Prior. Major Revision, *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*.

Biomedical Data Analysis

- Bioinformatics 2014 **X. Zhou**, J. Liu, X. Wan, W. Yu. Piecewise-Constant and Low-rank Approximation for Identification of Recurrent Copy Number Variations. *Bioinformatics*, 30(14): 1943-1949, 2014.
- SPIE 2013 **X. Zhou**, W. Yu. Low-Rank Modeling and its Applications in Medical Image Analysis. In *Proceedings of SPIE Vol. 8750*, 2013. Invited paper to the SPIE Defense, Security, and Sensing Conference.
- TCBB 2013 **X. Zhou**, C. Yang, X. Wan, H. Zhao, W. Yu. Multi-Sample aCGH Data Analysis via Total Variation and Spectral Regularization. *IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB)*, 10(1): 230-235, 2013.
- TUFFC 2013 **X. Zhou**, S. Lei, Y. Yu, C. Lien, K. K. Shung, W. Yu. Ultrasound Bio-Microscopic Image Segmentation for Evaluation of Zebrafish Cardiac Function. *IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control (UFFC)*, 60(4): 718-726, 2013.
- Bioinformatics 2011 C. Yang, **X. Zhou**, X. Wan, Q. Yang, H. Xue, W. Yu. Identifying Disease-Associated SNP Clusters via Contiguous Outlier Detection. *Bioinformatics*, 27: 2578-2585, 2011.
- ISBI 2010 **X. Zhou**, T. Liang, W. Yu. Accurate Segmentation of Ultrasound Images Using the Motion Cue. *International Symposium on Biomedical Imaging (ISBI)*, 2010.
- Submitted J. Liu, X. Wan, C. Wang, Ch. Yang, **X. Zhou**, C. Yang. A Latent Low-Rank Approach to Colocalizing Genetic Risk Variants in Multiple GWAS. Submitted to *Bioinformatics*.

Patents

Yu, Weichuan, Tianzhu Liang, and Xiaowei Zhou. Image Based Tracking. U.S. Patent US9390514 B2, Jul 12, 2016.

Professional Service

Co-founder and Co-Chair, The 1st Workshop on Geometry Meets Deep Learning

In conjunction with European Conference on Computer Vision 2016.

<http://sites.google.com/site/deepgeometry/>

Co-Organizer, 3DV Tutorial on 3D Object Geometry from Single Image

In conjunction with International Conference on 3D Vision 2016.

<http://sites.google.com/site/objectgeometry/>

Conference Program Committee

IEEE Conference on Computer Vision and Pattern Recognition
International Conference on Computer Vision
European Conference on Computer Vision
AAAI Conference on Artificial Intelligence

Journal Reviewer (selected)

ACM Computing Surveys
IEEE Transactions on Pattern Analysis and Machine Intelligence
International Journal of Computer Vision
Computer Vision and Image Understanding
IEEE Transactions on Image Processing
IEEE Transactions on Signal Processing
IEEE Transactions on Cybernetics
IEEE Transactions on Circuits and Systems for Video Technology
IEEE Transactions on Neural Networks and Learning Systems
IEEE Transactions on Biomedical Engineering
IEEE Signal Processing Letters
Pattern Recognition, Neurocomputing
Bioinformatics, BMC Bioinformatics

Supervisory Experience

Mentored Ph.D. students

George Pavlakos, Object and human pose, University of Pennsylvania, Since 2014
Spyridon Leonardos, Distributed data association, University of Pennsylvania, Since 2014
Carlos Esteves, Image matching, University of Pennsylvania, Since 2015
Menglong Zhu, 3D object recognition, University of Pennsylvania, 2014-2016

Invited Talks and Oral Presentations

GRASP Seminar, University of Pennsylvania, 2017.
Center of Imaging Science, Johns Hopkins University, 2016.
3D Object Geometry Tutorial, International Conference on 3D Vision, Stanford, 2016.
Vision and Learning Seminar (VALSE), Online Seminar, 2016.
Mid-Atlantic Computer Vision Workshop, Baltimore, USA, 2016.
International Conference on Computer Vision, Santiago, Chile, 2015.
IEEE Conference on Computer Vision and Pattern Recognition, Boston, 2015.
Cognitive Computing Lab, Intel Labs China, 2015.
The Hong Kong University of Science and Technology, Hong Kong, 2015.
Hong Kong Baptist University, Hong Kong, 2015.
Huazhong University of Science and Technology, China, 2015.
University of Electronic Science and Technology of China, 2015.
GRASP Special Seminar, University of Pennsylvania, 2012.
Image Processing and Analysis Group, Yale University, 2012.