
CONTACT INFO	Affiliation: UCLA Center for Vision, Cognition, Learning and Autonomy (VCLA) Email: yixin.zhu@ucla.edu Homepage: www.yzhu.io
RESEARCH INTERESTS	Computer Vision Functional Object and Scene Understanding Computer Graphics Physics-based Simulation Cognitive Science Computational Models of Perception and Action Robotics Functional Equivalent Manipulation Virtual Reality Extraordinary Environments and Abnormal Objects
EDUCATION	Ph.D. Candidate in Statistics, University of California, Los Angeles June 2015 Advisor: Song-Chun Zhu Currently Funded by DARPA: XAI N66001-17-2-4029, SIMPLEX N66001-15-C-4035 ONR MURI: N00014-16-1-2007 Previously Funded by DARPA: MSEE FA 8650-11-1-7149 ONR MURI: N00014-10-1-0933 NSF: IIS-1423305 M.S. in Computer Science, University of California, Los Angeles December 2013 B.E. in Software Engineering, Xi'an Jiaotong University, China July 2012
AWARDS AND SCHOLARSHIPS	Graduate Research Assistant, University of California, Los Angeles 2013-present CVPR Outstanding Reviewers 2017 Fellowship, University of California, Los Angeles 2015-2017 CUDA Hardware Donation Program for Researchers, Nvidia 2014 Honor Graduate Certificate, Xi'an Jiaotong University, China 2012 Google Scholarship, Google 2011 UCLA-CSST Research Scholarship, University of California, Los Angeles 2011 Samsung Scholarship, Samsung 2010 Excellent Student Scholarship, Xi'an Jiaotong University, China 2008-2011
PEER-REVIEWED JOURNAL PAPERS	T. Ye*, S. Qi*, J. Kubricht, Y. Zhu , H. Lu, and S.-C. Zhu. (* Joint first authors) The Martian: Examining Human Physical Judgments Across Virtual Gravity Fields. IEEE Transactions on Visualization and Computer Graphics (TVCG) 2017.
PAPERS UNDER REVIEW	C. Jiang*, Y. Zhu *, S. Qi*, S. Huang*, D. Terzopoulos, and S.-C. Zhu. (* Joint first authors) Photorealistic, RGB-D Image and Ground Truth Synthesis by Sampling Stochastic Grammars Representing Indoor Scenes. Submitted to International Conference on Computer Vision (ICCV), 2017. Y. Zhu , S.-C. Zhu, and C. Jiang. Learning Intangible Affordance from Videos by Inferring Temperature and Velocity Field in 3D Indoor Scenes. Submitted to International Conference on Computer Vision (ICCV), 2017. X. Xie*, H. Liu*, M. Edmonds, F. Gao, S. Qi, Y. Zhu , B. Rothrock, and S.-C. Zhu. (* Joint first authors) Learning Stochastic Grammar of Hand-object Interactions. Submitted to International Conference on Intelligent Robots and Systems (IROS), 2017. S. Qi, Y. Zhu , S. Huang, and S.-C. Zhu. Humar-centric Indoor Scene Synthesis using Stochastic Grammar. Submitted to International Joint Conference on Artificial Intelligence (IJCAI), 2017.

W. Liang, **Y. Zhu**, and S.-C. Zhu.
Tracking Occluded Objects and Recovering Incomplete Trajectories by Reasoning about Human Actions.
Submitted to International Joint Conference on Artificial Intelligence (IJCAI), 2017.

PEER-REVIEWED
CONFERENCE
PAPERS

M. Edmonds*, F. Gao*, X. Xie, H. Liu,
Y. Zhu, B. Rothrock, and S.-C. Zhu. (★ Joint first authors)
Learning Complex Functional Manipulations by Human Demonstration and Fluent Discovery.
Oral Presentation.
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2017.

H. Liu*, X. Xie*, M. Millar*, M. Edmonds, F. Gao,
Y. Zhu, V. J. Santos, B. Rothrock, and S.-C. Zhu. (★ Joint first authors)
A Glove-based System for Studying Hand-Object Manipulation via Pose and Force Sensing.
Oral Presentation.
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2017.

J. Kubricht*, **Y. Zhu***, C. Jiang*, D. Terzopoulos, S.-C. Zhu, and H. Lu. (★ Joint first authors)
Consistent Probabilistic Simulation Underlying Human Judgment in Substance Dynamics.
Oral Presentation.
Proceedings of the 39th Annual Conference of the Cognitive Science Society (CogSci), 2017.

J. Lin*, **Y. Zhu***, J. Kubricht*, S.-C. Zhu, and H. Lu. (★ Joint first authors)
Visuomotor Adaptation and Sensory Recalibration in Reversed Hand Movement Task.
Poster Presentation.
Proceedings of the 39th Annual Conference of the Cognitive Science Society (CogSci), 2017.

T. Ye*, S. Qi*, J. Kubricht, **Y. Zhu**, H. Lu, and S.-C. Zhu. (★ Joint first authors)
The Martian: Examining Human Physical Judgments Across Virtual Gravity Fields.
Oral Presentation.
IEEE Virtual Reality, 2017.

J. Lin*, X. Guo*, J. Shao*, C. Jiang, **Y. Zhu**, and S.-C. Zhu. (★ Joint first authors)
A Virtual Reality Platform for Dynamic Human-Scene Interaction.
Oral Presentation.
ACM SIGGRAPH Asia 2016, Workshop on Virtual Reality meets Physical Reality

W. Liang, Y. Zhao, **Y. Zhu**, and S.-C. Zhu.
What is Where: Inferring Containment Relations from Videos.
Oral Presentation.
Proceedings of the 25th International Joint Conference on Artificial Intelligence (IJCAI), 2016.

J. Kubricht*, C. Jiang*, **Y. Zhu***, S.-C. Zhu, D. Terzopoulos, and H. Lu. (★ Joint first authors)
Probabilistic Simulation Predicts Human Performance on Viscous Fluid-Pouring Problem.
Oral Presentation.
Proceedings of the 38th Annual Conference of the Cognitive Science Society (CogSci), 2016.

Y. Zhu*, C. Jiang*, Y. Zhao, D. Terzopoulos, and S.-C. Zhu. (★ Joint first authors)
Inferring Forces and Learning Human Utilities From Videos.
Oral Presentation.
Proceedings of the 29th IEEE Computer Vision and Pattern Recognition (CVPR), 2016.

W. Liang, Y. Zhao, **Y. Zhu**, and S.-C. Zhu.
Evaluating Human Cognition of Containing Relations with Physical Simulation.
Oral Presentation.
Proceedings of the 37th Annual Conference of the Cognitive Science Society (CogSci), 2015.

Y. Zhu*, Y. Zhao*, and S.-C. Zhu. (★ Joint first authors)
Understanding Tools: Task-Oriented Object Modeling, Learning and Recognition.
Poster Presentation.
Proceedings of the 28th IEEE Computer Vision and Pattern Recognition (CVPR), 2015.

TECHNICAL REPORTS J. Jeon, K. Micinski, J. Vaughan, N. Reddy, **Y. Zhu**, J. Foster, and T. Millstein.
Dr. Android and Mr. Hide: Fine-grained security policies on unmodified Android.
Technical Reports of the Computer Science Department, University of Maryland, 2015.

PROFESSIONAL SERVICES **Conference Organization**

Co-chair, Computer Vision and Pattern Recognition (CVPR) 2017 Workshop on
Vision meets Cognition: Functionality, Physics, Intentionality and Causality

Co-chair, SIGGRAPH Asia 2016 Workshop on
Virtual Reality meets Physical Reality: Modelling and Simulating Virtual Humans and Environments

Co-chair, CogSci 2016 Workshop on
Physical and Social Scene Understanding

Student Organizer, MURI Annual Review Meeting 2015.

Peer-reviewed Journals and Conferences

Reviewer, International Journal of Computer Vision (IJCV) 2015-2016
Reviewer, Computer Vision and Pattern Recognition (CVPR) 2015-2017
Reviewer, International Conference on Computer Vision (ICCV) 2015, 2017
Reviewer, British Machine Vision Conference (BMVC) 2017
Reviewer, CogSci 2015-2017

INVITED TALKS Guest Lecture: How to Build a Cognitive Robot
at UCLA Communication Study 155: Artificial Intelligence and New Media May, 2017

To Feel and Dream: Data for Intelligent Machine Beyond Images and Texts
at Teddy Talk in plenary session at CRESSTCON 2016 September, 2016

Understanding Functionality and Affordance of Objects and Scenes
at Beijing Institute of Technology May, 2016

Functionality and Affordance of Objects and Scenes
at Princeton Vision Group February, 2016

Understanding Objects as Tools, Containers and Chairs
at UCLA Computational Vision and Learning Lab and UCLA Human Perception Lab
November, 2015

Learning from Human Demonstration: Understanding Objects as Tools
at ONR MURI Annual Review Meeting September, 2015

Understanding Tool Use: a Task-oriented Vision Problem
at ONR MURI Annual Review Meeting December, 2014

What is a Tool? Going beyond what is where
at DARPA MSEE Annual Review Meeting September, 2014

IN THE PRESS Our work on Scene Understanding was featured in UCLA Statistics Moments. June, 2016

UCLA Daily Bruin Prime issued a special interview on our work.
Title: “Give a Robot a Flesh” May, 2016

Our work on “Understanding Tools” was featured in Statistics Department News. June, 2015

COLLABORATORS

- Prof. Chenfanfu Jiang
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- Eric Peltola and Prof. Veronica Santos
 at UCLA Biomechatronics Lab
- Dr. Jianxiong Xiao
 at AutoX Inc.
- Prof. Vahid Tarokh
 at Harvard University