

Zhou Ren

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INDUSTRY EXPERIENCE

- 12/2018 – present, **Senior Research Lead**, Wormpex AI Research, Bellevue, WA, USA
- 05/2018 – 12/2018, **Senior Research Scientist**, Snap Inc., Santa Monica, CA, USA
- 10/2017 – 05/2018, **Research Scientist (III)**, Snap Inc., Venice, CA, USA
- 04/2017 – 10/2017, **Research Scientist (II)**, Snap Inc., Venice, CA, USA
- 07/2016 – 04/2017, **Research Scientist (I)**, Snap Inc., Venice, CA, USA
- 03/2016 – 06/2016, **Research Intern**, Snap Inc., Venice, CA, USA
- 06/2015 – 09/2015, **Deep Learning Research Intern**, Adobe Research, San Jose, CA, USA
- 06/2013 – 09/2013, **Research Intern**, Toyota Technological Institute, Chicago, IL, USA
- 07/2010 – 07/2012, **Project Officer**, Media Technology Lab, Nanyang Technological University, Singapore

PROFESSIONAL SERVICES

- Area Chair**, CVPR 2021.
- Senior Program Committee**, AAAI 2021.
- Associate Editor**, The Visual Computer Journal (TVCJ), 2018 – present.
- Director** of Industrial Governance Board, Asia-Pacific Signal and Information Processing Association (APSIPA).

EDUCATION

Doctor of Philosophy

09/2012 – 09/2016, *University of California, Los Angeles (UCLA)*
Major: Vision and Graphics, Computer Science Department
Advisor: Prof. Alan Yuille

Master of Science

09/2012 – 06/2014, *University of California, Los Angeles (UCLA)*
Major: Vision and Graphics, Computer Science Department
Advisor: Prof. Alan Yuille

Master of Engineering

08/2010 – 01/2012, *Nanyang Technological University (NTU)*, Singapore
Major: Information Engineering, School of Electrical and Electronic Engineering
Advisor: Prof. Junsong Yuan

Bachelor of Engineering

09/2006 – 06/2010, *Huazhong University of Science and Technology (HUST)*, China
Major: Communication Engineering, Department of Electronic and Information Engineering
Overall GPA: 91.41/100 (Rank: 1/223) **Mathematical GPA: 96.51/100**

RESEARCH INTERESTS

Computer Vision, Multimedia, Machine Learning, and Natural Language Processing

PUBLICATIONS

(Note: "^" indicates the co-author is the student I mentored during whose internship or during an university collaboration)

JOURNAL

Sheng Liu[^], **Zhou Ren**, and Junsong Yuan, “SibNet: Sibling Convolutional Encoder for Video Captioning”, *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2020.

Hongyu Xu[^], Xutao Lv, Xiaoyu Wang, **Zhou Ren**, and Rama Chellappa, “Deep Regionlets: Blended Representation and Deep Learning for Generic Object Detection”, *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2019.

Alexey Kurankin, *et. al*, “Adversarial Attacks and Defences Competition”, NIPS 2017 Competition Book, Springer. (cited by 98)

Xiaowei Ding, Jianing Pang, **Zhou Ren**, Mariana Diaz-Zamudio, Chenfangfu Jiang, Zhaoyang Fan, Daniel Berman, Debiao Li, Demetri Terzopoulos, Piotr Slomka, and Damini Dey, “Automated Pericardial Fat Quantification from Coronary Magnetic Resonance Angiography”, *Journal of Medical Imaging (JMI)*, 2016.

Zhou Ren, Junsong Yuan, and Wenyu Liu, “Minimum Near-Convex Shape Decomposition”. *IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)*, vol.35, pp.2546-2552, 2013. (cited by 39)

Zhou Ren, Junsong Yuan, and Zhengyou Zhang, “Robust Part-based Hand Gesture Recognition using Kinect Sensor”. *IEEE Trans. on Multimedia (TMM)*, vol.15, pp.1110-1120, 2013. (**IEEE TMM 2016 Prize Paper Award (Best Paper)**) (cited by 652)

CONFERENCE

Chunluan Zhou, **Zhou Ren**, Gang Hua, “Temporal Keypoint Matching and Refinement Network for Pose Estimation and Tracking”. In *IEEE European Conference on Computer Vision (ECCV)*, 2020.

Shiyi Lan[^], **Zhou Ren**, Yi Wu, Larry Davis, Gang Hua, “SaccadeNet: A Fast and Accurate Object Detector”. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2020.

Tan Yu[^], **Zhou Ren**, Yuncheng Li, Enxu Yan, Ning Xu, Junsong Yuan, “Temporal Structure Mining for Weakly Supervised Action Detection”. In *International Conference on Computer Vision (ICCV)*, 2019.

Tianlong Chen[^], Shaojin Ding, Jingyi Xie, Ye Yuan, Wuyang Chen, Yang Yang, **Zhou Ren**, Zhangyang Wang, “ABD-Net: Attentive but Diverse Person Re-Identification”. In *International Conference on Computer Vision (ICCV)*, 2019.

Liuhaohao Ge[^], **Zhou Ren**, Yuncheng Li, Zehao Xue, Yingying Wang, Jianfei Cai, Junsong Yuan, “3D Hand Shape and Pose Estimation from a Single RGB Image”. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2019. (**Oral**) (cited by 67)

Jonghwan Mun[^], Linjie Yang, **Zhou Ren**, Ning Xu, and Bohyung Han, “Streamlined Dense Video Captioning”. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2019. (**Oral**)

Cihang Xie[^], Yuyin Zhou, Song Bai, Zhishuai Zhang, Jianyu Wang, **Zhou Ren**, and Alan Yuille, “Improving Transferability of Adversarial Examples with Input Diversity”. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2019. (cited by 74)

- Liuhaohao Ge[^], **Zhou Ren**, Junsong Yuan, “Point-to-Point Regression PointNet for 3D Hand Pose Estimation”. In *European Conference on Computer Vision (ECCV)*, 2018. (cited by 53)
- Hongyu Xu[^], Xutao Lv, Xiaoyu Wang, **Zhou Ren**, and Rama Chellappa, “Deep Regionlets for Object Detection”. In *European Conference on Computer Vision (ECCV)*, 2018. (cited by 47)
- Sheng Liu[^], **Zhou Ren**, Junsong Yuan, “SibNet: Sibling Convolutional Encoder for Video Captioning”. In *ACM Multimedia Conference (ACM MM)*, 2018. (Oral)
- Cihang Xie[^], Jianyu Wang, Zhishuai Zhang, **Zhou Ren**, Alan Yuille, “Mitigating Adversarial Effects Through Randomization”. In *International Conf. on Learning Representations (ICLR)*, 2018. (cited by 304)
- Zhou Ren**, Hailin Jin, Zhe Lin, Chen Fang, and Alan Yuille, “Multiple Instance Visual-Semantic Embedding”. In *British Machine Vision Conference (BMVC)*, 2017. (Oral) (cited by 46)
- Zhou Ren**, Xiaoyu Wang, Ning Zhang, and Li-Jia Li, “Deep Reinforcement Learning-based Image Captioning with Embedding Reward”. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2017. (Oral) (Nominated to the Best Student Paper Award) (cited by 166)
- Zhou Ren**, Hailin Jin, Zhe Lin, Chen Fang, and Alan Yuille, “Joint Image-Text Representation by Gaussian Visual-Semantic Embedding”. In *ACM Multimedia Conference (ACM MM)*, 2016. (cited by 35)
- Zhou Ren**, Chaohui Wang and Alan Yuille, “Scene-Domain Active Part Models for Object Representation”. In *IEEE International Conference on Computer Vision (ICCV)*, 2015.
- Xiaowei Ding, Jianing Pang, **Zhou Ren**, Mariana Zamudio, Daniel Berman, Debiao Li, Demetri Terzopoulos, Piotr Slomka, and Damini Dey, “Automated Pericardial Fat Quantification from Coronary Magnetic Resonance Angiography”. In *Medical Image Understanding and Analysis (MIUA)*, 80-85, 2015. (Oral)
- Zhou Ren**, Junsong Yuan, Chunyuan Li and Wenyu Liu, “Minimum Near-Convex Decomposition for Robust Shape Representation”. In *IEEE International Conference on Computer Vision (ICCV)*, 2011. (cited by 92)
- Zhou Ren**, Junsong Yuan, and Zhengyou Zhang, “Robust Hand Gesture Recognition Based on Finger-Earth Mover’s Distance with a Commodity Depth Camera”. In *ACM Multimedia Conference (ACM MM)*, Nov. 2011. (cited by 484)
- Zhou Ren**, Jingjing Meng, Junsong Yuan, and Zhengyou Zhang, “Robust Hand Gesture Recognition with Kinect Sensor”. In *ACM Multimedia Conference (ACM MM)*, Nov. 2011. (cited by 350)
- Zhou Ren**, Jingjing Meng, and Junsong Yuan, “Depth Camera based Hand Gesture Recognition and its Applications in Human-Computer-Interaction”. In *IEEE International Conference on Information, Communication, and Signal Processing (ICICS)*, Dec. 2011. (Oral) (cited by 197)
- Zhongyuan Lai, Junhuan Zhu, **Zhou Ren**, Wenyu Liu, and Baolan yan, “Arbitrary Directional Edge Encoding Schemes for the Operational Rate Distortion Optimal Shape Coding Framework”. In *2010 IEEE Data Compression Conference (DCC)*, pp. 20-29, Nov. 2010. (Oral)

PATENT

- Co-inventor with Jingjing Meng and Junsong Yuan, “System and method for robust hand gesture recognition using commodity depth sensor”. Singapore provisional patent application, filed in 10/2011.
- Co-inventor with Hailin Jin, Zhe Lin and Chen Fang, “Embedding space for images with multiple text labels”.

US patent application, filed in 01/2016.

Co-inventor with Hailin Jin, Zhe Lin and Chen Fang, “Modeling semantic concepts in an embedding space as distributions”. US patent application, filed in 01/2016.

Co-inventor with Xiaoyu Wang, Ning Zhang, and Jia Li, “Embedding-driven image captioning using deep reinforcement learning and lookahead beam search”. US patent application, filed in 11/2016.

Co-inventor with Zehao Xue, “Generating Data in a Messaging System for a Machine Learning Model”. US patent application, filed in 12/2017.

Co-inventor with Roger Luo, Sushobhan Nayak, Xinran He, and Christophe Van Gysel, “Query Matching to Media Collections in a Messaging System”. US patent application, filed in 01/2018.

Co-inventor with Ebony Charlton, Sumant Hanumante, and Dhritiman Sagar, “Device Location based on Machine Learning Classifications”. US patent (US9980100B1), granted in 05/2018.

SELECTED HONORS & AWARDS

ACADEMIC

- 12/2017 **2nd Place** in **NIPS 2017 Adversarial Defense Challenge** (among 107 competing teams worldwide)
- 07/2017 **IEEE Conf. on Computer Vision and Pattern Recognition Best Student Paper Award Nomination**
- 07/2016 **IEEE Trans. on Multimedia 2016 Prize Paper Award (Best Paper Award)**
- 09/2012 **UCLA University Fellowship**
- 08/2011 **EEE Spotlight Promotion Project Award**, School of EEE, NTU (6 out of ~200 research projects in EEE)
- 06/2010 **First-class Outstanding Undergraduate Dissertation**, in Hubei Province (top 1%)
- 10/2009 **National First Class Scholarship**, Education Ministry of China (top 0.5%)
- 10/2007 **Merit Student Award**, and selected to “**Special Eugenics Program**” in HUST (top 1%)

SPORTS

- 06/2010 **Bronze Medal**, in “**HUST Basketball Graduation Cup**”, a member of School’s Basketball Team
- 10/2007 Selected to **All-Star Basketball Team**, School of Electronic Information and Communication, HUST
- 10/2006 **First place, Men’s 1500m running**, School of Electronic Information and Communication, HUST

MENTORED STUDENT COLLABORATORS

- Lluís Castrejon (*2017 Summer*), PhD student at MILA, University of Montreal
- Zhe Li (*2017 Summer*), PhD student at University of Iowa
- Hongyu Xu (*2017 Summer*), PhD student at University of Maryland, College Park
- Cihang Xie (*2017 Fall – 2018 Spring*), PhD student at Johns Hopkins University
- Sheng Liu (*2017 Fall – 2019 Fall*), PhD student at The State University of New York at Buffalo
- Lihao Ge (*2018 Spring – 2019 Spring*), PhD student at Nanyang Technological University

- Tan Yu (*2018 Summer*), PhD student at Nanyang Technological University
- Shibi He (*2018 Summer*), PhD student at University of Illinois Urbana-Champaign
- Jonghwan Mun (*2018 Summer*), PhD student at Pohang University of Science and Technology
- Tianlong Chen (*2019 Spring*), PhD student at Texas A&M University
- Ye Yuan (*2019 Spring*), PhD student at Texas A&M University
- Wuyang Chen (*2019 Spring*), PhD student at Texas A&M University
- Shiyi Lan (*2019 Summer*), PhD student at University of Maryland, College Park
- Zhenyu Wu (*2020 Summer*), PhD student at Texas A&M University
- Yiding Yang (*2020 Summer*), PhD student at Stevens Institute of Technology
- Tongzhou Mu (*2020 Summer*), PhD student at University of California San Diego

TEACHING EXPERIENCE

09/2013 – 06/2014, **Teaching Assistant/Associate**, CS31, CS32, UCLA

PROFESSIONAL SKILLS

Proficient with Caffe, PyTorch, Torch, Tensorflow. Experienced with Microsoft Kinect Sensor, Theano.
Programming languages: C/C++, Python, Lua, Matlab, CPLEX, Lingo.
Fluent in English, native in Mandarin.

PERSONAL QUALIFICATIONS & INTERESTS

Highly self-motivated, cooperative, passionate and efficient
Interested in script writing, designing, basketball, and gym workout

REFEREES

Available upon request