Peter (Zhihang) Ren

CONTACT INFORMATION

Email : peter.zhren@berkeley.edu | Google scholar
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EDUCATION

University of California, Berkeley Aug. 2019 - Present
Ph.D. in Vision Science. Advisor : Stella X. Yu,David Whitney.
Research in Computer Vision, Medical Imaging, and Vision Science

University of California, San Diego Aug. 2017 - June 2019
M.S. in Electrical and Computer Engineering. Advisor : Nuno Vasconcelos, Bhaskar D. Rao
Research in Computer Vision, and Medical Imaging. GPA : 3.77/4.0

University of Glasgow Sep. 2013 - June 2017
B.Eng. in Electronic and Electrical Engineering

University of Electronic Science and Technology of China Sep. 2013 - June 2017
B.S. in Electronic Engineering. Advisor : Shuaicheng Liu
Research in Image and Video Processing. GPA : 3.90/4.0, Rank :1/139

PUBLICATIONS

1. VEATIC: Video-based Emotion and Affect Tracking in Context Dataset
Zhihang Ren*, Jefferson Ortega*, Yifan Wang*, Zhimin Chen, Yunhui Guo, Stella X. Yu, David Whitney
arXiv preprint,
2. Serial dependence in perception across naturalistic GAN-generated mammograms
Zhihang Ren, Teresa Canas-Bajo, Cristina Ghirardo, Mauro Manassi, Stella X. Yu, David Whitney
Journal of Medical Imaging, 2023,
3. Serial Dependence in Dermatological Judgments
Zhihang Ren, Xinyu Li, Dana Pietralla, Mauro Manassi, David Whitney
Diagnostics, 2023
4. Idiosyncratic biases in the perception of medical images
Zixuan Wang, Mauro Manassi, **Zhihang Ren**, Cristina Ghirardo, Teresa Canas-Bajo, Yuki Murai, Min Zhou, David Whitney
Frontiers in Psychology, 2022
5. Controllable Medical Image Generation via GAN
Zhihang Ren, Stella X. Yu, David Whitney
Journal of Perceptual Imaging, 2022
6. Improve Image-based Skin Cancer Diagnosis with Generative Self-Supervised Learning
Zhihang Ren, Yunhui Guo, Stella X. Yu, David Whitney
IEEE/ACM Conference on Connected Health Applications, Systems, and Engineering Technologies (CHASE), 2021
7. Serial Dependence in the Perceptual Judgments of Radiologists
Mauro Manassi*, Cristina Ghirardo*, Teresa Canas-Bajo*, **Zhihang Ren**, William Prinzmetal, David Whitney
Cognitive Research : Principles and Implications, 2021
8. Controllable medical image generation via generative adversarial networks
Zhihang Ren, Stella X. Yu, David Whitney
Human Vision and Electronic Imaging (HVEI) **Oral**, 2021
9. Coding Trajectory: Enable Video Coding for Video Denoising
Zhihang Ren, Peng Dai, Shuaicheng Liu, Shuyuan Zhu, Bing Zeng
IEEE International Conference on Image Processing (ICIP), 2018
10. MeshFlow Video Denoising
Zhihang Ren, Jiajia Li, Shuaicheng Liu, Bing Zeng
IEEE International Conference on Image Processing (ICIP), 2017
11. Shape Recovery of Endoscopic Videos by Shape from Shading using Mesh Regularization
Zhihang Ren, Tong He, Lingbing Peng, Shuaicheng Liu, Shuyuan Zhu, Bing Zeng
International Conference on Image and Graphics (ICIG), 2017

Working & Experience

Research Scientist Intern at Meta Reality Labs May. 2022 - Dec. 2022
· Studied VQGAN in face editing applications
· Researched face editing in discrete latent space
· Researched a new style transfer task.

Graduate Student Instructor at UC Berkeley
Machine Learning (CS189/289) [Fall 2019] : Design novel homework and exam questions on CCA algorithm, classic computer vision tasks, etc. , and lead discussion sessions. 400 students are enrolled in the class.

Perception (Psych C126) [Spring 2021, Spring 2022, Spring 2023(Head GSI)] : Manage GSI duties, arrange course materials, lead discussion sessions and office hours to help 60 students understand basic human visual system and perception mechanisms.

Teaching Assistant at UC San Diego Fall 2018
Statistical Learning (ECE271A) : Hold office hours to help students understand the concepts in statistical learning. 200 students are enrolled in the class.

Teaching Assistant at UESTC Fall 2015, 2016 Spring 2017
Introductory Programming : Hold office hours to help students understand the concepts in C/C++ programming. Lead lab session. 300 students are enrolled in the class.

Microelectronic Systems : Prepare and lead lab session. Help students on their project design and implementation. 300 students are enrolled in the class.

Mentoring 6 undergraduate students and 2 graduate students on their research projects.
Reviewer Services : Medical Education, Frontiers in Psychology
Program Committee Chair : Bay Area Vision Research Day (BAVRD), Online, 2020

Awards

The Outstanding Graduate Student Instructor (OGSI) Award	2023
Elsevier/Vision Research Travel Award	2023
NSF Student Travel Award	2021
National Scholarship (top 1.5%)	2013-2014, 2014-2015
People's First Prize Scholarship (top 5%)	2015-2016
Academic Excellent Scholarship (top 5%)	2013-2014, 2014-2015

Skills

Programming languages : Python, C/C++, MATLAB, R
Deep learning/Robotics framework : PyTorch, Tensorflow, Keras
Softwares : Photoshop, Premiere, Illustrator
Languages : English, Chinese.

Activities & Talks

1. Serial Dependence Biases Realistic Skin Cancer Diagnosis
   The Annual Meeting of Vision Science Society (VSS), **Talk**, May 19-24, 2023
2. An Enhanced Dataset for Inferential Emotion Tracking in Humans and Machines
   The Annual Meeting of Vision Science Society (VSS), May 19-24, 2023
3. Serial Dependence in Radiologist Perception across Naturalistic Mammogram Stimuli
   The Annual Meeting of Vision Science Society (VSS), May 13-18, 2022
4. Simultaneous Localization and Size Discrimination Modeling via Convolutional Neural Network
   The Annual Meeting of Vision Science Society (VSS), May 13-18, 2022
5. Sequentially dependent errors generalize across naturalistic mammogram stimuli
   The Annual Meeting of Vision Science Society (Virtual-VSS), **Talk**, May 21-26, 2021
6. A General Model for Medical Stimuli Synthesis
   The Annual Meeting of Vision Science Society (Virtual-VSS), May 21-26, 2021
7. A Generative Model for Tumor Stimuli Synthesis
   The Annual Meeting of Vision Science Society (Virtual-VSS), May 17, 2020
8. Vice President of Finance, Vision Science Student Government 2020-2021

Hobbies

Hiking, Photography, Badminton, and Tennis