

# Zhihang Ren

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## Education

<b>University of California, Berkeley</b> Ph.D. in Vision Science   Advisors: Stella X. Yu, David Whitney Research in Computer Vision, Medical Imaging, and Vision Science	Expected graduation date: May. 2024 <b>GPA: 3.98/4.0</b>
<b>University of California, San Diego</b> M.S. in Electrical and Computer Engineering   Advisors: Nuno Vasconcelos, Bhaskar D. Rao Research in Computer Vision, and Medical Imaging	Aug. 2017 - June 2019 <b>GPA: 3.77/4.0</b>
<b>University of Electronic Science and Technology of China</b> B.S. in Electronic Engineering   Advisors: Shuaicheng Liu	Sep. 2013 - June 2017 <b>GPA: 3.90/4.0</b>

## Experience

<b>Meta Reality Labs</b> <i>Research Scientist Intern</i>	May. 2022 - Dec. 2022 <i>Python, Pytorch, GenAI, GAN</i>
<ul style="list-style-type: none"><li>Contributed to Meta's Generative AI project focused on facial expression editing via VQGAN.</li><li>Proposed a new style transfer task to generate novel style images by modeling popular styles on the Internet.</li><li>Studied a generative method to solve the proposed task by disentangling, contrastive learning, and adversarial learning.</li></ul>	

## Projects

<b>Human Emotion Perception Study</b> <i>Understand and model human emotion perception mechanism</i>	Oct. 2022 - Ongoing <i>Python, Pytorch, Video Understanding</i>
<ul style="list-style-type: none"><li>Investigating mechanism of human emotion perception, and roles of character and context information in the process.</li><li>Building the first video dataset for emotion understanding consisting of both continuous and categorical annotations.</li><li>Designing new video understanding tasks for emotion perception, and creating benchmarks for those tasks.</li></ul>	
<b>Serial Dependence Study in Diagnostics</b> <i>Data analysis of diagnostic data</i>	Dec. 2019 - Ongoing <i>Python, Pytorch, Data Science, Machine Learning, GenAI, GAN</i>
<ul style="list-style-type: none"><li>Investigating the impact of visual serial dependence, a human visual effect, on diagnostic performance.</li><li>Building generative AI tools for researchers to controllably produce authentic medical image stimuli.</li><li>Proposing, designing, and verifying approaches to alleviate serial dependence influence in real diagnostic scenarios.</li></ul>	
<b>Skin Cancer Classification via Generative Self-Supervised Learning</b> <i>Improve the reliability of the classification boundaries</i>	Feb. 2021 - July. 2021 <i>Python, Pytorch, Machine Learning, GenAI, GAN</i>
<ul style="list-style-type: none"><li>Proposed to utilize generative models to enrich the rare case data, increasing the robustness of classification.</li><li>Boosted the accuracy of self-supervised skin cancer image classification by 11.17% on BCN20000.</li></ul>	

## Selected Publication

- 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  
*IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2024*
- 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*
- Controllable Medical Image Generation via GAN  
**Zhihang Ren**, Stella X. Yu, David Whitney  
*Journal of Perceptual Imaging, 2022*
- 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*

## Skills

### Languages & Tools:

Python, C++, MATLAB, R, Pytorch, Tensorflow, scikit-learn, Keras