

TIANYU HUA

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EDUCATION

University of British Columbia & Vector Institute; Advisor: Prof. Leonid Sigal <i>Master of Science in Computer Science (M.Sc.)</i>	BC, Canada <i>Expected in Jun. 2023</i>
Queen's University <i>Exchange Student</i>	Ontario, Canada <i>Jan. 2019 – May 2019</i>
China University of Geosciences <i>Bachelor of Computer Science, GPA: 89.19/100 (TOP 5%)</i>	Beijing, China <i>Sep. 2016 – Jun. 2020</i>

EXPERIENCE

Research Assistant; Advisor: Prof. Leonid Sigal <i>Vector Institute</i>	From Sep. 2021 <i>Toronto, Canada</i>
<ul style="list-style-type: none">• Paper <i>Self-supervision through Autoregressive Image Segment Prediction</i> will be submitted to ECCV 2022• Write a paper named <i>Self-supervised Image Parsing</i> which implements a version of the GLOM model originally proposed by Geoffrey Hinton• Open sourced the code for self-supervised Masked Autoencoders on GitHub	
Research Assistant; Advisor: Prof. Hang Zhao <i>Tsinghua University, IIS Multimodal Group</i>	Jan. 2021 – Jun. 2021 <i>Shanghai, China</i>
<ul style="list-style-type: none">• Paper <i>On Feature Decorrelation in Self-Supervised Learning</i> was accepted to ICCV2021 as an oral presentation• Designed experiments that reveals the connection between model collapse and feature correlations• Open sourced the code for self-supervised models SimSiam/BYOL/SimCLR/SwAV on GitHub	
Research Intern; Advisor: Dr. Yalong Bai <i>JD AI Research, CV Lab</i>	Jan. 2020 – Aug. 2020 <i>Beijing, China</i>
<ul style="list-style-type: none">• Research paper <i>Relationship Matters for Multi-objects Image Generation</i> accepted by AAAI 2021• First Place in AliProducts Challenge: Large-scale Product Recognition at CVPR 2020• Third Place in the iMet Collection Recognition Challenge at CVPR 2020 FGVC workshop• Designed a novel mutual information adversarial training technique that will automatically segment objects in images• Submitted the paper Unsupervised Image Segmentation with Contrastive Instance Distancing as the first author to CVPR2021	
Research Assistant; Advisor: Prof. Maithilee Kunda <i>Artificial Intelligence and Visual Analogical Systems Lab, Vanderbilt University</i>	Jul. 2019 – Sept. 2019 <i>Nashville, TN</i>
<ul style="list-style-type: none">• Proposed a framework that leveraged an inpainting algorithm trained on photorealistic object images from ImageNet and achieved a score of 27/36 on the Raven's Colored Progressive Matrices test which corresponds to the average performance of a nine-year-old child• Finished the paper <i>Modeling Gestalt Visual Reasoning on Raven's Progressive Matrices Using Generative Image Inpainting Techniques</i> as the first author to target CogSci conference (Welcome to our Poster booth 3422 at the CogSci 2020 Virtual Conference this summer)	
Research Intern; Advisor: Prof. Ran He <i>Institute of Automation, Chinese Academy of Sciences (CASIA)</i>	Aug. 2017 – Jul. 2018 <i>Beijing, China</i>
<ul style="list-style-type: none">• Reproduced the experimental results of a paper on face completion with Generative Adversarial Networks (GAN)• Tested whether unpaired geometry-face datasets would lead to good quality synthesized face images by applying cycle-GAN structure into geometry-guided face generation• Designed and implemented a network structure through the improvement of the DR-GAN to reduce the discrepancy between frontal and side face images, which contributed to an increase in accuracy of 5% with the Multi-Pie dataset	

TECHNICAL SKILLS

Languages: Python, Swift, C/C++, Java, JavaScript, HTML/CSS, Bash, MATLAB
Frameworks: PyTorch, JAX, TensorFlow, Flutter, Flask
Developer Tools: Git, Docker, Google Cloud Platform, Amazon Web Services, VS Code, PyCharm
Libraries: pandas, NumPy, SciPy, Matplotlib