

# TIANYU HUA

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## EDUCATION

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

## EXPERIENCE

<b>Research Assistant; Advisor: Prof. Leonid Sigal</b> <i>Vector Institute</i>	From Sep. 2021 <i>Toronto, Canada</i>
<ul style="list-style-type: none"><li>• <a href="#">Paper</a> <i>Self-supervision through Random Segments with Autoregressive Coding (RandSAC)</i> will be submitted to ECCV 2022</li><li>• Write a paper named <i>Self-supervised Image Parsing</i> which implements a version of the <a href="#">GLOM</a> model originally proposed by Geoffrey Hinton</li><li>• Open sourced the <a href="#">code</a> for self-supervised Masked Autoencoders on GitHub</li></ul>	
<b>Research Assistant; Advisor: Prof. Hang Zhao</b> <i>Tsinghua University, IIIS Multimodal Group</i>	Jan. 2021 – Jun. 2021 <i>Shanghai, China</i>
<ul style="list-style-type: none"><li>• <a href="#">Paper</a> <i>On Feature Decorrelation in Self-Supervised Learning</i> was accepted to ICCV2021 as an <b>oral</b> presentation</li><li>• Designed experiments that reveals the connection between model collapse and feature correlations</li><li>• Open sourced the <a href="#">code</a> for self-supervised models SimSiam/BYOL/SimCLR/SwAV on GitHub</li></ul>	
<b>Research Intern; Advisor: Dr. Yalong Bai</b> <i>JD AI Research, CV Lab</i>	Jan. 2020 – Aug. 2020 <i>Beijing, China</i>
<ul style="list-style-type: none"><li>• Research <a href="#">paper</a> <i>Relationship Matters for Multi-objects Image Generation</i> accepted by AAAI 2021</li><li>• First Place in AliProducts Challenge: Large-scale Product Recognition at CVPR 2020</li><li>• Third Place in the iMet Collection Recognition Challenge at CVPR 2020 FGVC workshop</li><li>• Designed a novel mutual information adversarial training technique that will automatically segment objects in images</li><li>• Submitted the paper Unsupervised Image Segmentation with Contrastive Instance Distancing as the first author to CVPR2021</li></ul>	
<b>Research Assistant; Advisor: Prof. Maithilee Kunda</b> <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"><li>• 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</li><li>• Finished the <a href="#">paper</a> <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)</li></ul>	
<b>Research Intern; Advisor: Prof. Ran He</b> <i>Institute of Automation, Chinese Academy of Sciences (CASIA)</i>	Aug. 2017 – Jul. 2018 <i>Beijing, China</i>
<ul style="list-style-type: none"><li>• Reproduced the experimental results of a paper on face completion with Generative Adversarial Networks (GAN)</li><li>• Tested whether unpaired geometry-face datasets would lead to good quality synthesized face images by applying cycle-GAN structure into geometry-guided face generation</li><li>• 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</li></ul>	

## 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