TIANYU HUA

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EDUCATION

University of British Columbia & Vector Institute; Advisor: Prof. Leonid Sigal — BC, Canada
Master of Science in Computer Science (Ph.D. Track M.Sc.) — *Expected in Jun. 2022*

Queen's University — Ontario, Canada
Exchange Student — *Jan. 2019 – May 2019*

China University of Geosciences — Beijing, China
Bachelor of Computer Science, GPA: 89.19/100 (TOP 5%) — *Sep. 2016 – Jun. 2020*

EXPERIENCE

Research Assistant; Advisor: Prof. Hang Zhao — Jan. 2021 – Jun. 2021
Tsinghua University, IIIS Multimodal Group — *Shanghai, China*

- Paper ***On Feature Decorrelation in Self-Supervised Learning*** 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 — Jan. 2020 – Aug. 2020
JD AI Research, CV Lab — *Beijing, China*

- Research paper ***Relationship Matters for Multi-objects Image Generation*** 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 — Jul. 2019 – Sept. 2019
Artificial Intelligence and Visual Analogical Systems Lab, Vanderbilt University — *Nashville, TN*

- 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 ***Modeling Gestalt Visual Reasoning on Raven's Progressive Matrices Using Generative Image Inpainting Techniques*** 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 — Aug. 2017 – Jul. 2018
Institute of Automation, Chinese Academy of Sciences (CASIA) — *Beijing, China*

- 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