HAONAN QIU

The Chinese University of Hong Kong(SZ), No. 2001, Longxiang Road, Shenzhen
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RESEARCH INTERESTS

Adversarial Machine Learning, Deep Generative Model

EDUCATION

Bachelor of Engineering in Computer Science Aug 2015 - May 2020
The Chinese University of Hong Kong, Shenzhen, CGPA: 3.63/4.00, **MGPA: 3.95/4.00**

Summer Transfer Jun 2017 - Aug 2017
University of California, Berkeley, GPA: 4.00/4.00

PUBLICATIONS

SemanticAdv: Generating Adversarial Examples via Attribute-conditional Image Editing
Haonan Qiu, Chaowei Xiao, Lei Yang, Xinchen Yan, Honglak Lee, Bo Li
ArXiv preprint, 2019.

Two-phase Hair Image Synthesis by A Self-Enhancing Generative Model
Haonan Qiu, Chuan Wang, Hang Zhu, Xiangyu Zhu, Jinjin Gu, Xiaoguang Han
To appear in Computer Graphics Forum (CGF), 2019.

RESEARCH EXPERIENCE

Research Intern, Remotely Corporate With Prof. Bo Li at UIUC May 2019 - Present

- **PaintMal**. Applied inpainting in pdf malware generation whose results evaded the most real-world Anti-virus detectors on VirusTotal. (under review)
- **SemanticAdv**. Achieved semantic attack by **feature-space interpolation**, which owned the **strongest** attack performance compared to all other semantic attack methods. (under review)
- **EdgeGANRob**. Used robust edge features to improve the robustness of CNNs without adversarial training. Applied GAN to compensate for the loss of information caused by edge extraction. (under review)
- Explored how to use the additional unlabelled data from other domains to improve the robustness of classification models. Researched the extraordinary overfitting phenomenon in Adversarial Training.

Research Intern, Super-Resolution Group at SenseTime Sep 2018 - May 2019

- Surveyed the state-of-the-art approaches of image denoising and super-resolution.
- Reproduced some influential algorithms of denoising and super-resolution. Integrated them into a unified framework.
- Explored the advanced methods of denoising and super-resolution, mainly for real scenes rather than using the simulated data as before.

Research Assistant, Shenzhen Research Institute of Big Data at CUHK(SZ) Jan 2018 - Sep 2018

- Paper retrieval and presentation in seminars. Main topics were about GAN and its related applications.
- Created a high quality dataset for hair synthesis. Tested almost all state-of-the-art generative models.
- Created a self-enhancing generative model for Sketch2Hair. (published)

PROJECTS

Reinforcement Learning Project June 2018
Lab Activity of Visiting Program to Tsinghua University

· Learned the basic knowledge of reinforcement learning within one week.
· Implemented PPO algorithm and tuned the parameters to solve some Mujoco tasks in OpenAI Gym.
· Summarized the defect of PPO and proposed potential solutions. Won the Best Team Award.

Selfie Style Transfer Software Development Feb 2018 - May 2018
In-class Project

· Surveyed existing style transfer approaches and tested some of them.
· Transferred human face into cartoon or animal style by Neural Style Transfer and Cycle-GAN.

Unmanned Aerial Vehicle -Assisted Unmanned Ground Vehicle Systems Jun 2017 - Dec 2017
Advised by Professor Simon Pan in Wireless Communication Lab at School

· Designed an algorithm for automatic path planning, which took into account potential target points.
· Optimized route for the unmanned ground vehicle. Corrected the route with Kalman Filter.
· One paper accepted by ICCC (responsible for the algorithm part).

CUHK(SZ) Wechat Campus Card Development Jun 2017 - Oct 2017
Cooperation with Information Technology Services Office at School

· Learned the Front-End technology and Wechat mini program language. Developed CUHK(SZ) mini program.
· More than two-thirds of students were our users and won the Digital Star Award by Tencent.

Form Reader and Handwriting Characters Recognition Software Jan 2017 - May 2017
Cooperation with Admissions Office at School

· Designed a form reader software which could use phone to replace scanner for Admissions Office.
· Developed some effective functions for data processing on forms automatically.
· Tried to add OCR functions but failed due to the complexity of handwritten Chinese characters.

HONORS AND ACTIVITIES

Dean's List	2016, 2017, 2018
Undergraduate Research Award	2016, 2017, 2018
Undergraduate Student Teaching Fellow (Student Teaching Assistant for total 3 courses)	2016, 2017
Academic Performance Scholarship	2018
Tencent WeChat Campus Card "Digital Star"	2017

SKILLS

Programming Languages	Python, C++, Java, R, Matlab, HTML, CSS, etc
Packages	Pytorch, Tensorflow, OpenCV