

# HAONAN QIU

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## OBJECTIVE

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I'm **Haonan Qiu**, an undergraduate majoring in computer science at School of Science and Engineering at The Chinese University of Hong Kong, Shenzhen. I'm interested in Adversarial Learning, Deep Learning, and Computer Vision (particularly deep generative models).

Before starting the last year of the undergraduate, I gaped one year to explore my research interests. I firstly joined Sensetime as a research intern. After that, I was supervised by **Prof. Bo Li** in UIUC remotely and worked closely with **Chaowei Xiao**. We have done a lot of exciting research about Adversarial Learning.

Now I go back to school as a senior student. **I'm eager to pursue a future PhD position (2020 FALL).**

## EDUCATION

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**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

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**SemanticAdv: Generating Adversarial Examples via Attribute-conditional Image Editing**  
**Haonan Qiu**, Chaowei Xiao, Lei Yang, Xincheng 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

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**Research Intern, Remotely Corporate With Prof. Bo Li in 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** 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

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### Reinforcement Learning Project

June 2018

*Lab Activity of Visiting Program to Tsinghua University*

- Learned the basic knowledge of reinforcement learning in 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 ICCV (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 CUHKSZ 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.

## SKILLS

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<b>Programming Languages</b>	Python, C++, Java, R, Matlab
<b>Common Tools</b>	Pytorch, OpenCV

## HONORS AND ACTIVITIES

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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