Weichuang Li

Curriculum Vitae

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▬▬▬ Education

To begin in Aug 2021	**City University of Hong Kong**, Master of Science. Computer Science
Sep 2017 – July 2021	**Sichuan University**, Bachelors of Science in Cyberspace Security. Average grade: 83.18/100, Average grade of the last two years: **89.55/100**
July 2019 – Aug 2019	**National University of Singapore**, Summer Study. AI & Security

▬▬▬ Academic Project

April 2021 – Present

Robust GAN-generated Image Detection Based on Contrastive Learning.

Supported by National Natural Science Foundation of China (61902263, 61972269),China Postdoctoral Science Foundation(2020M673276) (Supervisor: Peisong He)

- Aim to address the issue where the detection performance is greatly affected by post-processing operations
- Designed a data augmentation strategy and also incorporate contrastive learning to improve the robustness
- We also write a review about forensics techniques about GAN, including classical GANs and generated images detection methods

Aug 2020 – May 2021

Learning generalized representation of GAN Image by Domain Generalization.

Bachelor Thesis (Supervisor: Peisong He)

- Designed to expose generalized artifacts of GAN-generated images
- Combined the ideas of domain generalization and meta-learning
- Evaluated the method against a wide range of different GAN images and our method outperforms benchmarks
- Responsible for the framework design, writing code and report production
- Got familiar with different GAN architectures, transfer learning

Feb 2020 – Aug 2020

Sentiment analysis system based on deep learning.

Chinese Collegiate Computing Competition, **Group Leader**, (Supervisor: Haizhou Wang)

- Assess the speech confidence level by detecting micro-expressions, facial heart rates and emotions in audio materials
- Improve the facial heart rate detection technology, dialogue sentiment analysis, and the accuracy rate of the model

March 2019 – March 2020

Machine-learning-based honeypot identification.

National Innovation and Entrepreneurship Programme, Participant, (Supervisor: Cheng Huang)

- Adopted machine-learning technology to classify the information received from the server and recognise honeypots and their types
- Got familiar with the common types of honeypot and their mechanisms and T-POT platform

Publications

- **Weichuang Li** et al., Detection of GAN-generated Images by Estimating Artifact Similarity, **IEEE Signal Processing Letters(IF=3.105)**(Under Review)
- P. He, **Weichuang Li** et al., An Overview of Passive Forensics and Anti-Forensics Techniques for GAN-generated Image, **Journal of Image and Graphics(CCF-B)**(Under Review)

Activity

June 2020 – July 2020	**Chengdu Guoxinan Information Industrial Base**, Security Intern. Examined the deployment of system base lines and presented the result, programmed the examining scripts with Python, and developed Web modules using SpringBoot
July 2018 – July 2019	**Student Rights Office, Sichuan University**, Director. Directed the organisation of events such as the Customers Protection Day and AIDS Education Day
Sep 2017 – July 2018	**Debating Team, College of Cybersecurity, Sichuan University**, Founding Member. Participated in debating competitions in the College and University
Sep 2017 – July 2018	**Organisation Department, College of Cybersecurity, Sichuan University**, Founding Member. Planed and organized activities, such as the welcoming party for freshers

Achievements

2020	**Chinese Collegiate Computing Competition**, National-level. Second Prize (**Top 1%** of 30,000+ teams)
2019	**Collegiate Cybersecurity Peak Training Camp**, Ministry of Education. Top-100
2018	**College Cup**, Sichuan University. Best Debater
2018	**Big Four**, Sichuan University. Two-time Best Debater

Skills & Abilities

TOEFL	98 (R:28, L:25, S:20, W:25)
GRE	323+3.5(V:158, Q:165, AW:3.5)
Software	Pytorch, Keras, Docker
Research Interest	Generative Model, 3D vision, Transfer Learning, Image Forensics