**email**

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**Jiale Cai**

**CV**

**Education**

**Huazhong University of Science and Technology (HUST), Wuhan, China** Sept. 2021 -

*M.S. in* *Cyberspace Security* **Major GPA: 3.92/4.0**

School of Cyber Science and Engineering Supervisor: Junqing Yu

**Huazhong University of Science and Technology (HUST), Wuhan, China** Sept. 2017 - Jun. 2021

*B.S.* *in Cyberspace Security* **Major GPA: 3.61/4.0**

School of Cyber Science and Engineering

**Research Interests**

My research primarily focuses on the application of Deep Learning in Computer Vision, specifically in the areas of **robustness** and the utilization of image generation networks. I have conducted extensive studies to develop robust deep learning models that can handle various challenges in computer vision tasks, such as occlusion, noise, and adversarial attacks. Specific research focuses are as follows:

**Image Forgery Detection** [1]: Aim to build a weakly supervised system to identify modifications or manipulations made to images in order to deceive or misrepresent information.

**Image Editing** [2]: propose a diffusion-based model within the Progressive Image Generation framework to incrementally insert desired elements into an existing image.

**Occluded person Re-ID** [3]: Design a feature pruning and consolidation framework identifying and matching individuals on cases where people are partially or fully occluded by objects or other individuals.

**Algorithm Robustness** [4]: Improve the reliability of algorithms in adversary environments.

In the future, I am committed to improving distributed/federated training algorithms that can seamlessly scale to a large number of computing nodes in realistic scenarios in terms of byzantine robustness, privacy preserving, communication/computation efficiency, and generalization performance.

**Publication &** **Manuscripts**

1. **AAAI 2024,** IN PREPARATION (all experiments have been completed)：

**J**[**iale**](https://openreview.net/profile?id=~Jianrong_Lu1) **Cai**, YuTeng Ye, Hang Zhou, Junqing Yu, Wei Yang. *“Semantic-Guided Weakly Supervised Image Splicing Localization”.* Submitting to the Association for the Advancement of Artificial Intelligence.

1. **CVPR 2024,** IN PREPARATION (all experiments have been completed)：

YuTeng Ye, **Jiale Cai**, Hang Zhou, Junqing Yu, Wei Yang. *“Semantics and Relationship-Guided Diffusion Model for Progressive Image Generation”*. Submitting to the International Conference on Medical Image Computing and Computer Assisted Intervention.

1. **ICCV2023,**UNDER REVIEW**:**

YuTeng Ye, Hang Zhou, Junqing Yu, **Jiale Cai**, Chenxing Gao, Youjia Zhang, Junle Wang, Qiang Hu, Wei Yang. *“Dynamic Feature Pruning and Consolidation for Occluded Person Re-Identification”*. The IEEE International Conference (ICCV) 2023. Under review. **Note: three "weak accept"**.

1. **ICCV 2023,** UNDER REVIEW:

Chenxing Gao, Hang Zhou, Junqing Yu, YuTeng ye, **Jiale Cai**, Junle Wang, Wei Yang. *“Attacking Transformers with Feature Diversity Adversarial Perturbation”*. The IEEE International Conference (ICCV) 2023. Under review. **Note: one "borderline", two "weak reject"**

**Miscellaneous Experience**

**Awards:**

"Second-class Scholarship for Postgraduates" of Huazhong University of Science and Technology

"Merit Postgraduate" of Huazhong University of Science and Technology

" Outstanding Undergraduate " of Huazhong University of Science and Technology

**Certification:**

The National College English Test Band Four Certificate

The National College English Test Band Six Certificate

**Skills**

**Coding:** Pytorch, C, C++, Python, SQL, Markdown

**Misc.:** Academic research, LATEX typesetting and publishing