Jin Wang

Tel: +86-18018910152
E-mail: wangjin20g@ict.ac.cn

Education Background

Dalian University of Technology **09/2016-06/2020**
School of Software
Bachelor of Engineering
(GPA: 4.07/5.0 **Rank:** 1/64)

University of Chinese Academy of Sciences **09/2020-06/2023**
Institute of Computing Technology
Master of Engineering
(GPA: 3.92/4.0**)**

Research Area: Interpretability of AI, Generative Adversarial Networks, Deepfake Detection
Major Courses: Pattern Recognition (95), Computer Architecture (95), Digital Image Processing (100)
Language Skill: Passing CET-4 (604), CET-6 (582) and IELTS (8.0) at one time

Awards

2022.11 National Scholarship (postgraduate)
2022.05 Merit Student of the University of Chinese Academy of Sciences
2020.06 Outstanding Graduate of Dalian
2019.10 Firefly Scholarship of Dalian University of Technology (10,000RMB)
2019.04 Special Award of the National College English Contest
2018.10 National Scholarship (undergraduate)

Research Experiences

Interpretable Generative Adversarial Networks（AAAI 2022 oral） **07/2020-09/2021**

- This paper proposes a generic method to modify a traditional GAN into an interpretable GAN, which ensures that filters in an intermediate layer of the generator encode disentangled localized visual concepts.
- Each filter in the layer is supposed to consistently generate image regions corresponding to the same visual concept when generating different images.
- The interpretable GAN learns to automatically discover meaningful visual concepts without any annotations of visual concepts.
- The interpretable GAN enables people to modify a specific visual concept on generated images by manipulating feature maps of the corresponding filters in the layer.

Explaining Deepfake Detection by Analysing Image Matching（ECCV 2022） **10/2021-03/2022**

- This paper aims to interpret how deepfake detection models learn artifact features of images when just supervised by binary labels.
- To this end, three hypotheses from the perspective of image matching are proposed as follows.

  1. Deepfake detection models indicate real/fake images based on visual concepts that are neither source-relevant nor target-relevant, that is, considering such visual concepts as artifact-relevant.

  2. Besides the supervision of binary labels, deepfake detection models implicitly learn artifact-relevant visual concepts through the FST-Matching (*i.e.* the matching fake, source, and target images) in the training set.

  3. Implicitly learned artifact visual concepts through the FST-Matching in the raw training set are vulnerable to video compression.

- In experiments, the above hypotheses are verified among various DNNs.
- Furthermore, based on this understanding, we propose the FST-Matching Deepfake Detection Model to boost the performance of forgery detection on compressed videos.

Internship Experiences

Megvii Technology **10/2021-Now**

Investigating the area of deepfake detection for improving models' generalization to unseen and compressed forgeries. One of the works was accepted to ECCV 2022.

Project Experiences

Interpretable Knowledge Reasoning System (2.63 million) **09/2019-06/2020**

In order to improve the trustworthiness, interpretability and transferability of CNNs, this work comprehensively adopts a number of techniques to analyze and evaluate CNNs, including visualizing the decision regions of CNNs based on the Grad-CAM method、analyzing the internal logic of CNNs' predictions based on the graph model method, and migrating multiple CNNs based on the network transplanting method.

Extracurricular Activities / Volunteer Work

2021.09–2022.08 Volunteer at the Branch of Beijing Haidian Volunteer Federation at the Institute of Computing Technology

Responsibilities: Managing the official account of the organization on WeChat and organizing activities for volunteers.

2018.09-2020.06 Monitor of Class 1616 at Dalian University of Technology

Responsibilities: Organizing various activities for the class. The class was awarded the Class of Academic Progress in 2019 at Dalian University of Technology.

2017.09-2018.07 Deputy Director of Ministry of Culture in Students' Union

Responsibilities: Participating in the stage lighting work of the school's evening parties.

2017.05-2017.09 Tencent Penguin Counseling Q&A teacher internship

Responsibilities: Working as a teaching assistant.

2017.03-2017.07 Volunteer at Ganlu Public Welfare Association of Dalian University of Technology

Responsibilities: Voluntary tutoring for one student with financial trouble every weekend.