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# A SURVEY ON DETECTION OF DEEPPAKES

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## ABSTRACT

Detection of manipulated images have been becoming an important topic in social security. With the development of computer vision and deep learning, fake images can easily generate and propagate over social networks. Commercial editing tools such as Photoshop and GIMP empower anyone non-expert to create sophisticated images. Deepfakes, with the help of deep learning especially GAN, can produce large-scale photorealistic fakes at a hand's turn. These fakes have caused huge damage to celebrities even national leaders, so it is an emergency to study the detection of them. In this paper, I investigate the methods of detection including detection to handcrafted manipulations and deepfakes.

## References

- [1] Xinxun Xu, Hao Wang, Leida Li, and Cheng Deng. Semantic adversarial network for zero-shot sketch-based image retrieval. *arXiv preprint arXiv:1905.02327*, 2019.
- [2] Gao Peng, Hongsheng Li, Haoxuan You, Zhengkai Jiang, Pan Lu, Steven Hoi, and Xiaogang Wang. Dynamic fusion with intra-and inter-modality attention flow for visual question answering. *arXiv preprint arXiv:1812.05252*, 2018.
- [3] Ishan Misra, Ross Girshick, Rob Fergus, Martial Hebert, Abhinav Gupta, and Laurens van der Maaten. Learning by asking questions. In *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition*, pages 11–20, 2018.

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