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Deepfake Detection through Deep Learning

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Abstract: *Deepfakes allow for the automatic generation and creation of (fake) video content, e.g. through generative adversarial networks. Deepfake technology is a controversial technology with many wide reaching issues impacting society, e.g. election biasing. Much research has been devoted to developing detection methods to reduce the potential negative impact of deepfakes. The results suggest that while deepfakes are a significant threat to our society, political system and business, they can be combatted via legislation and regulation, corporate policies and voluntary action, education and training, as well as the development of technology for deepfake detection, content authentication, and deepfake prevention. The study provides a comprehensive review of deepfakes and provides cyber security and AI entrepreneurs with business opportunities in fighting against media forgeries and fake news. Generations and the results were realistic. Moreover, we implemented a DeepFake Detector XceptionNet with minor modifications which achieved 95% accuracy on detecting DeepFakes. At last, we implemented a newly introduced technique in which the DeepFake generation is perturbed through which it can easily fool the deepfake detector..*

Keywords: DeepFakes, Image Animation, DeepFakes Generations, Detection of DeepFakes, GANS, Adversarial Attacks, Fooling DeepFake Detectors

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