

AN AI BASED FACIAL GENERATION SYSTEM TO IDENTIFY CRIMINALS

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ABSTRACT

The importance of forensics is obvious when it comes to criminal investigations. This research focuses on a specific type of forensic evidence, which is forensic sketches. Throughout the years, forensic sketches have been hand drawn and there have been no proper software related solutions to address the problems in this domain. The problems with forensic sketches include the time taken to produce sketches, their accuracy and the lack of forensic sketch artists.

The purpose of this project is to utilize the powers of generative image modelling and build a software-based solution to address the problems in producing forensic sketches and use them in criminal investigations. Generative Adversarial Networks has been a hot topic in computer science research, and it has proven to be able to generate photorealistic images. This project uses a conditional GAN to generate images based on a given description. This can be used by law enforcement agencies to input a description given by a witness to generate the criminals face.

The model was developed and tested against some standard facial descriptions. The system was able to produce promising results and it proves the fact that generative adversarial models can be used to address the problems identified. With more time and more training data, this solution will be able to do wonders in the forensics domain.

Keywords:

Generative Image Modelling, Photorealistic images, Artificial Intelligence, Image Synthesizer, Facial Generation Tool