

Leveraging generative adversarial networks for age-invariant face recognition

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ABSTRACT

Given an image of a person at any stage of life, the system must recognize an identity of the individual as they claim to be. It is a crucial element in forensic science like criminal investigation, missing person identification, legal proceedings, digital identification, accounting, and evidence analysis. In this paper we propose GAN architecture to get the images of the same person with the age regression and progression which is then matched with the original data source to identify the person. We have built a primary dataset of 62 individuals, and we have utilized secondary data sources like FGNET, CALFW, CACD2000 to train and test the model. The result of our preprocessed dataset gave us an accuracy of 93% and FGNET's accuracy is 91%, whereas CALFW's is 87% and CACD2000 is 83% which concludes that our dataset undergoing initial reconstruction was found to yield better results of our model. The developed model is best used in age-invariant face recognition.

Keywords: Component; Face aging; Generative adversarial network; Deep learning; Image synthesis