

عنوان مقاله:

Empowering Face Recognition Methods Using a GAN-based Single Image Super-Resolution Network

محل انتشار:

ماهنامه بین المللی مهندسی، دوره 35، شماره 10 (سال: 1401)

تعداد صفحات اصل مقاله: 9

نویسندگان:

Mostafa Shahbakhsh - *Computer Engineering and IT Department, Shahrood University of Technology, Shahrood, Iran*

Hamid Hassanpour - *Prof. Hamid Hassanpour Shahrood University of Technology Faculty of Computer Engineering and IT ۰۹۱۱ ۱۱۲ ۸۳۸۰ h_hassanpour@yahoo.com h.hassanpour@shahroodut.ac.ir*

خلاصه مقاله:

Face recognition is one of the most common authentication techniques widely used due to its easy access. In many face recognition applications, captured images are often of low resolution. Face recognition methods perform poorly on low resolution images because they are trained on high resolution face images. Although existing face hallucination methods may generate visually pleasing images, they cannot improve the performance of face recognition methods at low resolution as the structure of the face image and high-frequency details are not sufficiently preserved. Recent advances in deep learning have been used in this paper to propose a new face super-resolution approach to empower face recognition methods. In this paper, a Generative Adversarial Network is used to empower face recognition in low-resolution images. This network considers image edges and reconstructs high-frequency details to preserve the face structure. The proposed technique to generate super-resolved features is usable in any face recognition method. We have used some state-of-the-art face recognition methods to evaluate the proposed method. The results show a significant impact of the proposed method on the accuracy of face recognition of low resolution images.

کلمات کلیدی:

Face recognition, Super-resolution, Face Hallucination, Residual Self-attention, Generative adversarial network, Identity Preserving

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1479009>

