NTNU

Master Thesis

Morph Attack Detection Performance with Varying Face Image Quality

OBJECTIVES & GOALS:

Open source morphing tools has increased the potential of generating a high quality morphed face image. Generated morph face images has indicated vulnerability on commercial face recognition software. Reliable detection of morphed face images can reduce vulnerability especially in high secure applications including border control. Considering the vulnerability caused by the morphed images on face recognition system especially in border control scenario, Automatic Border Control (ABC) gates are introduced. Images obtained by ABC gates are compared with the printed images on the electronic Machine Readable Travel Document (eMRTD). However the variation in the image capture quality may alter the performance of Morph Attack Detection (MAD). The task is to analyze the variation in MAD performance with respect to different image capture quality. If this task is of your interest, Please do not hesitate to contact us.

TASKS:

- To implement machine learning and deep learning algorithms.
- To perform experiments on the dataset consisting of images with different capture quality and obtain standardized results.
- To work on the state-of-the-art morphing techniques.

PREREQUISITES:

- Interest in image processing, biometrics.
- Proficiency in OpenCV/ C/C++ /matlab

FURTHER READING:

- U. Scherhag, C. Rathgeb, J. Merkle, R. Breithaupt, and C. Busch. Face recognition systems under morphing attacks: A survey. IEEE Access, 2019

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NOTE: Highly qualified foreign students can get financial support to cover cost of an internship