3D BASEL FACE MODEL

Problem – Challenge

3D Morphable Models (3DMM) is a technology that can automatically generate 3D faces at any desired pose and illumination from one or more photographs. 3DMM may be used to perform various tasks such as face recognition, face image analysis (estimating the 3D shape from a single photograph), expression transfer between individuals, animation of faces and stimuli generation for psychological experiments.

However, the widespread use of 3DMMs has been held back by their difficult construction process, which requires a precise and fast 3D scanner, and the scanning of several hundreds of individuals.

Solution

The 3D Basel Face Model (BFM), which was published by the Computer Science department of the University of Basel (Prof. Vetter) is a standardized training data set that is based on face scans of 100 female and 100 male persons. When using the BFM for implementing 3DMM, the difficult construction process does not have to be performed anymore. This makes 3DMM much more attractive for commercial applications. BFM is provided under a free non-commercial license for research institutions, and a commercial license for companies. Several commercial licenses have been issued so far and the BMF is currently used or evaluated for applications in online shops (e.g. fitting of glasses), plastic surgery (face simulation) and visual effects in movies. In addition, the University of Basel has developed and patented an improved 3DMM called "Global-to-Local-Model". Vizago, a spin-off company of the University of Basel, offers commercial applications and services based on this new model.