FaceTracker: A Human Face Tracking and Facial Organ Localizing System

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1. Introduction
This paper presents a tracking system based on the technique of gravity-center template [1] to track faces and localize facial organs such as pupil, eyes, nose and mouth.

2. System Structure
The system consists of two stages (Fig.1). Input with an original video, the system will output an object video with face and facial organ areas' locations.

3. System Implementation
A system is set up as shown in Fig. 7, which can track single or multiple upright faces and localize facial organs in unconstrained backgrounds. A real time video is input from a USB digital camera. The tracking speed is 4.2 frames per second on a PentiumIII-700MHz PC. The average rates of tracking and localization are 97.8% and 87.5% respectively on a test set of 600 sequential images.

4. Conclusion and future work
The system introduced here is more practical compared with some detecting schemes such as deformable template technique [2]. Further work will include the improvement of facial texture check and utilization of movement or skin color information.

References