TPA 14: 3-D FACIAL HAIR Modeling

Introduction:

Modeling human hair from photographs is a topic of ongoing interest to the graphics community. Although facial hair plays an important role in individual expression, facial-hair reconstruction is not addressed by current face-capture systems. Since facial appearance plays such an important role in human communication, mastering the human face has long been a central goal of computer graphics. The characteristics of someone's face are a core component of their individuality and help make their physical appearance unique from every other person. While many facial characteristics are difficult to change, facial hair is one feature that is easily adapted.

Objective:

Use reconstruction algorithm to detect and traces hairs in the captured images and reconstruct them in 3D using a multi-view stereo approach.

Input:

Image of the face from which facial hair is to be detected

Output:

3D facial model with 3D facial hair - eye brows, eye lashes, mustache, beard (full grown and stubble).

References:

1. High fidelity facial hair capture, Graham Fyffe. 2012. In ACM SIGGRAPH 2012 Talks (SIGGRAPH '12). ACM, New York, NY, USA, , Article 23 , 1 pages. http://doi.acm.org/10.1145/2343045.2343077 www.youtube.com/watch?v=SjcqGxNBy2M

2. "Coupled 3D Reconstruction of Sparse Facial Hair and Skin", Thabo, Bernd Bicker, Gioacchino Noris, Paul Beardsley, Steve Marschner, Robert W. Sumner, Markus Gross, SIGGRAPH, 2012.