

# DeMaMech Exchange Report

**Freerk Wilbers**

**Amsterdam – Osaka 17 April 2006**

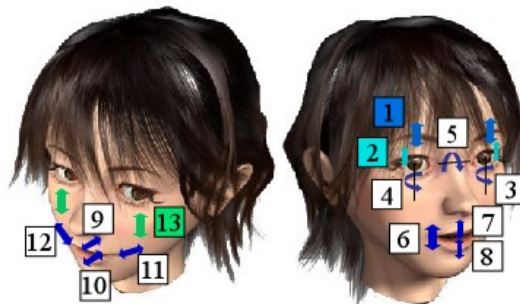
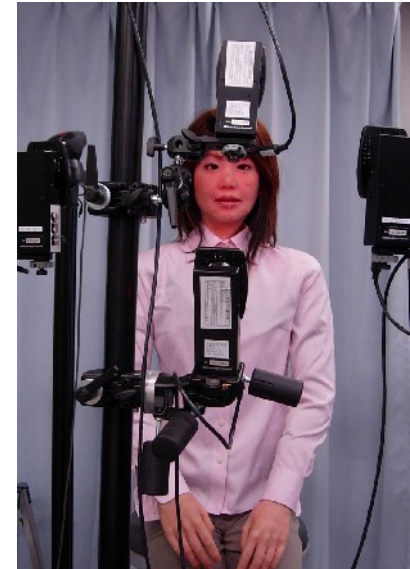
**Osaka – Amsterdam 14 October 2006**

# Executive Summary

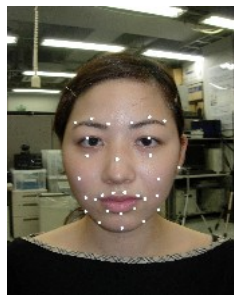
- 6 month stay in Osaka, Japan
- Research project at Ishiguro Lab (top laboratory), Osaka U on 'Generating Facial Motion in an Android'
- Different working and social habits, language difference, but quite easy to adapt
- A sometimes challenging, but very rewarding experience!

# Research: Facial Motion Generation

- (1) Data Collection by Motion Capture of human facial motion
- (2) Transferring this human motion to the android by a linear mapping method



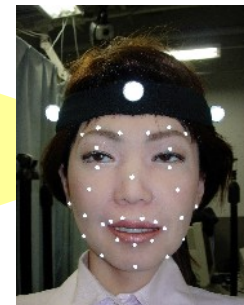
11 facial actuators in the android



$\mathbf{X}_{human}$

$$\mathbf{X}_{human} - \mathbf{X}_{human} = \mathbf{X}_{neutral} + (\alpha_1 \cdot \mathbf{X}_1, \alpha_2 \cdot \mathbf{X}_2, \dots, \alpha_{13} \cdot \mathbf{X}_{13})$$

$\alpha_i = i$  th actuator activation,  $0 \leq \alpha_i \leq 1$



$\mathbf{X}_{android}$

# Research: Facial Motion Generation

(3) Improving and optimising the motion transfer method

(4) And in future:

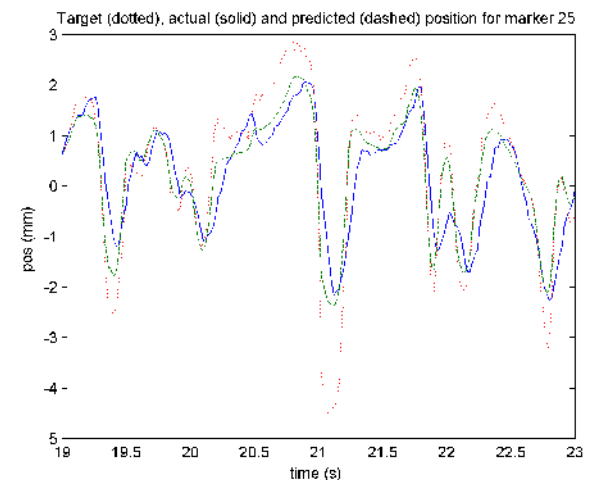
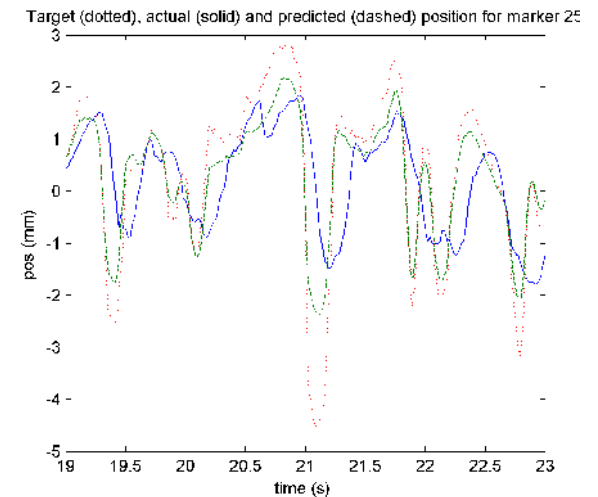
improve the transfer method / mocap data

computer model of the face

emotions / nonverbal

predict from speech

...



# Exchange student in Osaka

