

Optimized Facial Rigging and Animation

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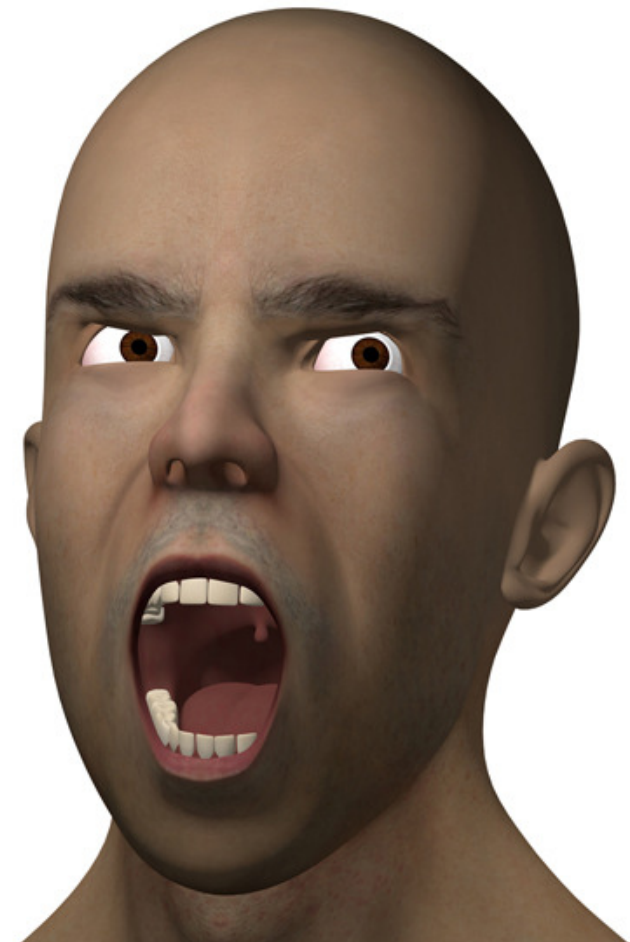


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Optimized Facial Rigging and Animation



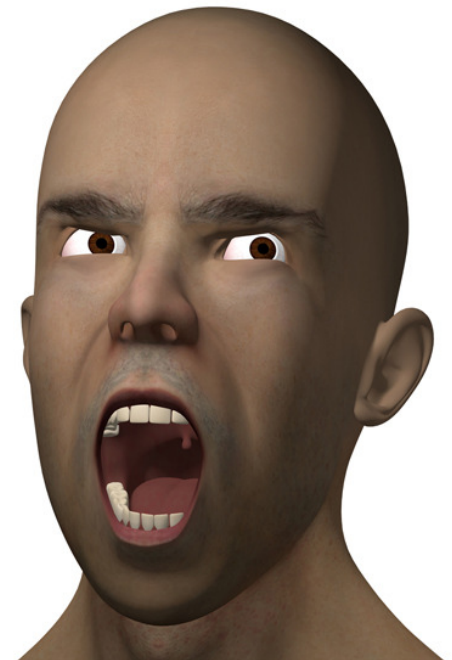
The process of planning and setting the mechanics and controls to animate the face of a 3D character.



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Optimized Facial Rigging and Animation

Applications: Media

Films Videogames Advertising



Prometheus, 2012



Samaritan, 2012

VIDEO

Optimized Facial Rigging and Animation



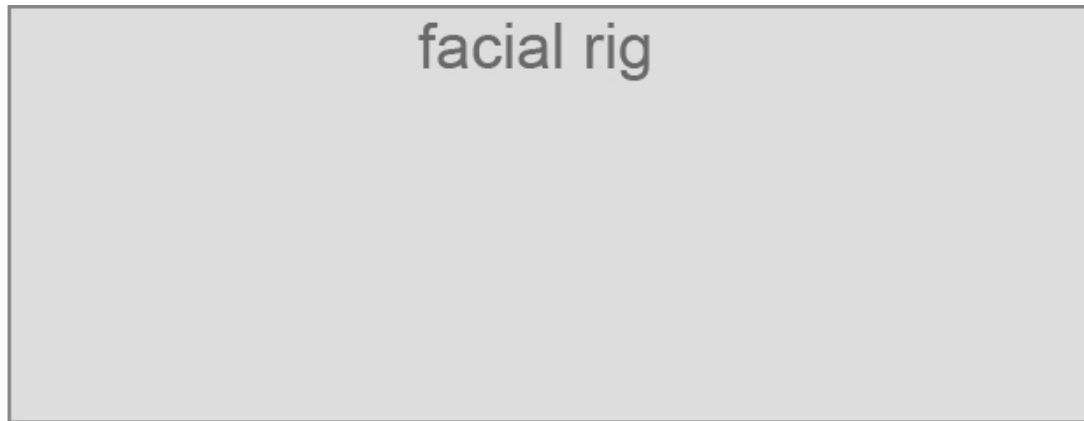
facial
model

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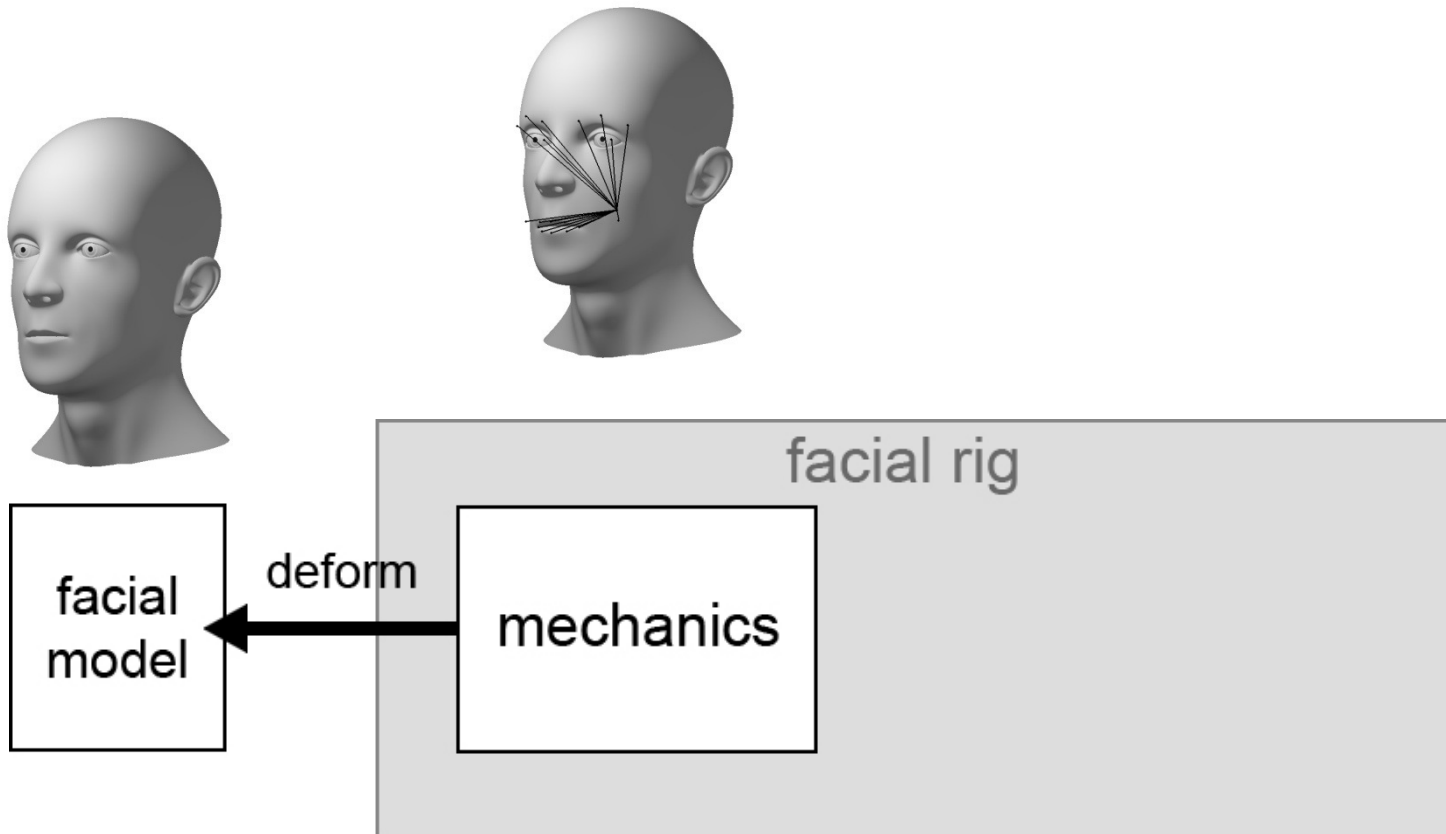


facial
model

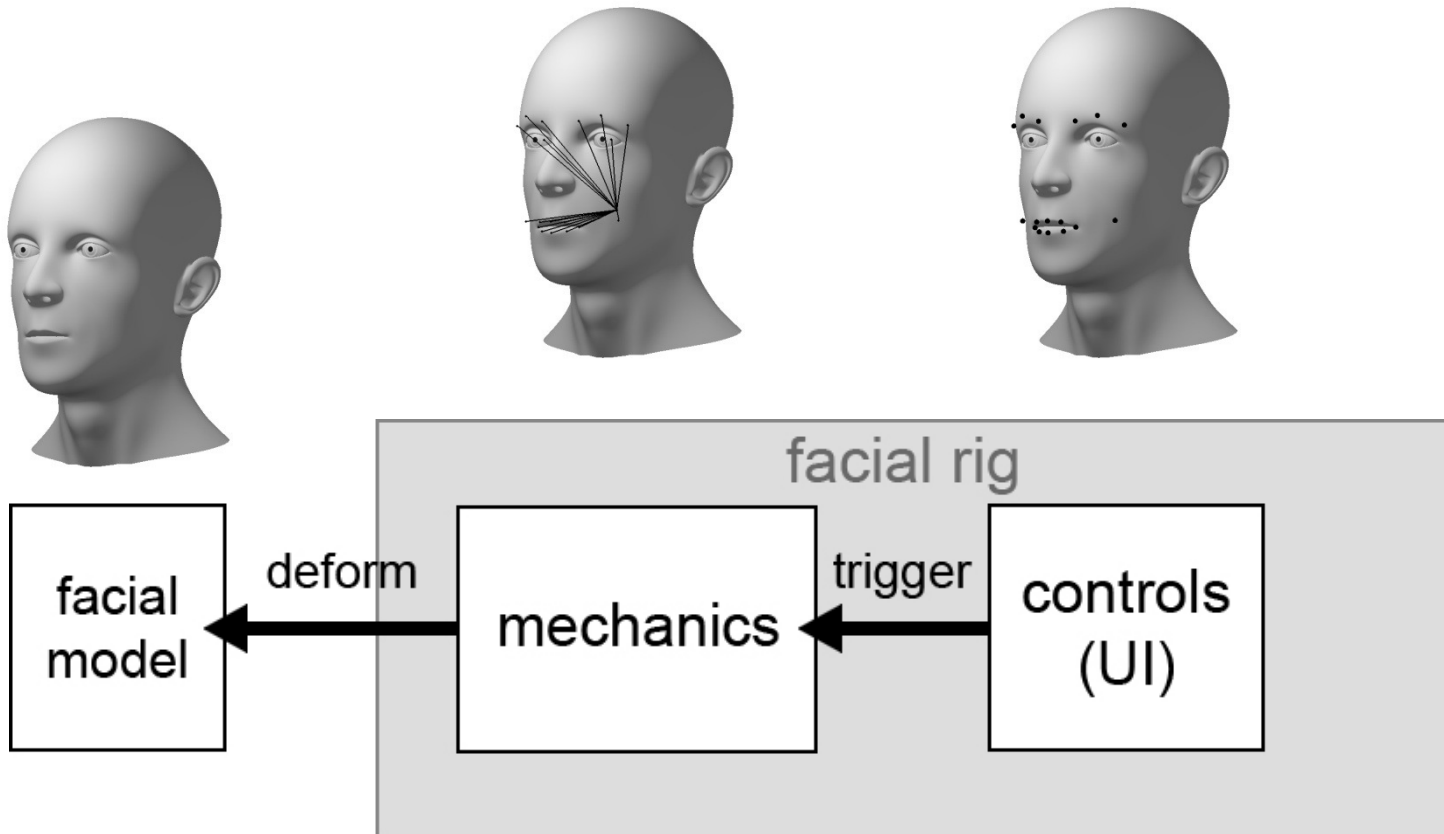
facial rig



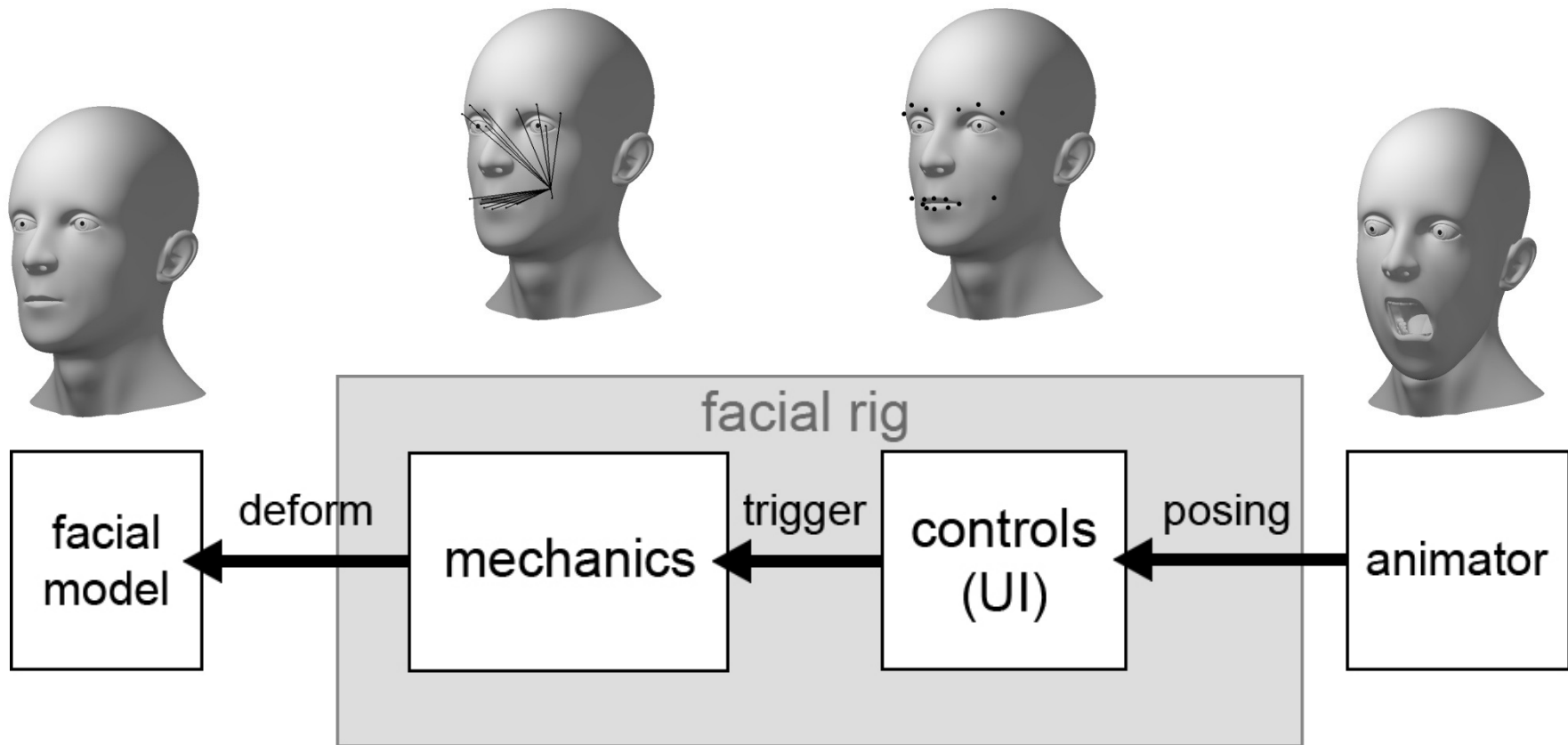
Optimized Facial Rigging and Animation



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Optimized Facial Rigging and Animation



Optimized Facial Rigging and Animation

The artists approaches since the 90s: **state of the art**

- Many approaches worldwide
- Complexity of the approaches

Bastos et al., Facial Rigging for Key Frame Animation, Proc. ARTECH'2012

VIDEO

Optimized Facial Rigging and Animation



Character facial rigging and animation is:

- laborious and frustrating
- very time-consuming
- expensive



Optimized Facial Rigging and Animation



“Simulating the ocean is hard,
simulating a face is harder.”

Jen Hsun Huang
NVIDIA Co-founder & CEO

2013 GPU Technology Conference

Optimized Facial Rigging and Animation

Focus in the human face

The human face as a basis for other facial styles:

- rig mechanics (behaviors)

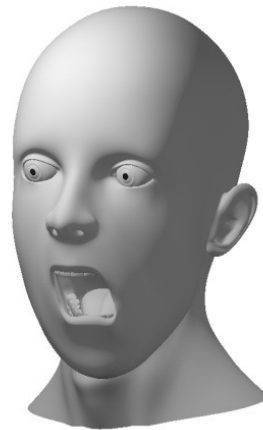


- rig controls (interface)



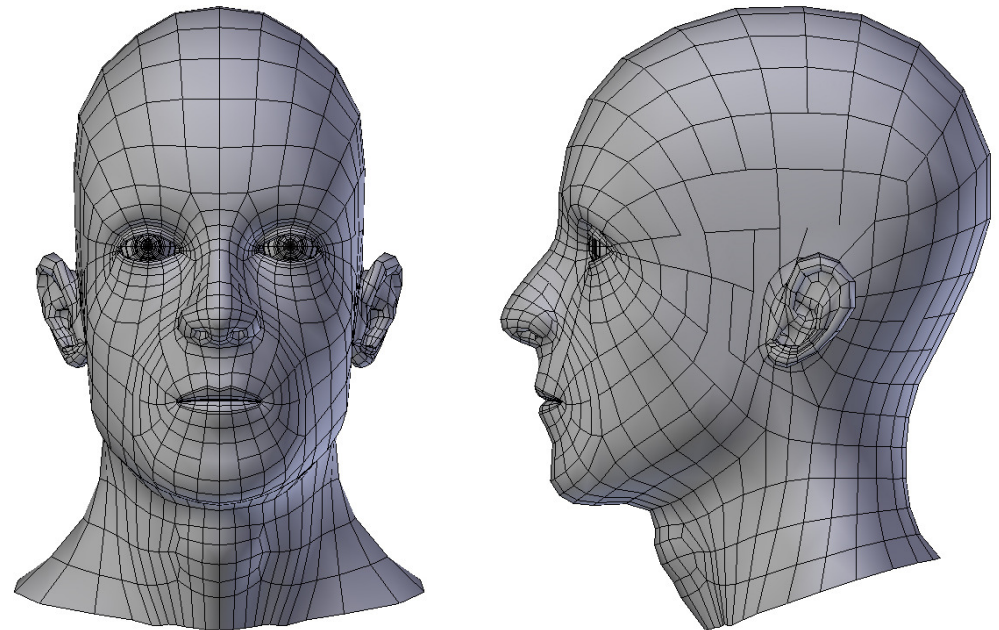
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Focus in the human face



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Focus in the human face: **facial model**



P. Bastos, Exploring Facial Modeling for Animation in Blender, BlenderArt Mag. 39

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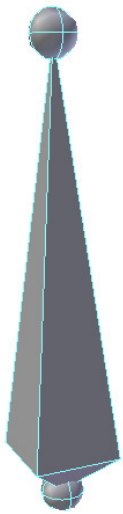
Implementation



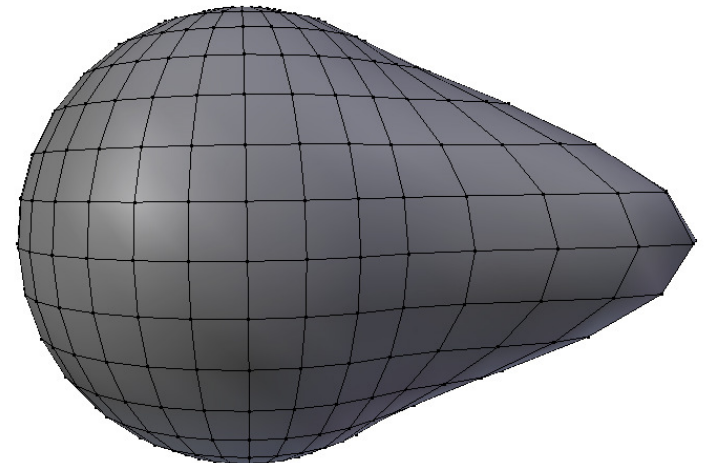
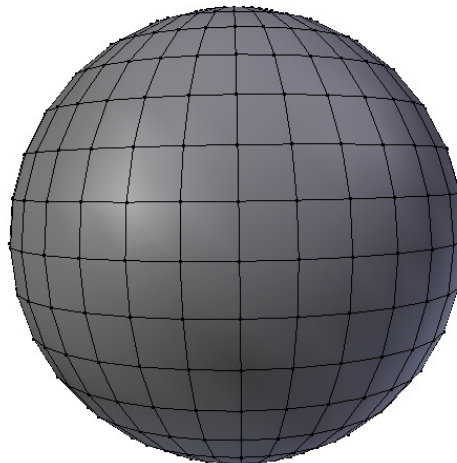
- open-source / community support
- tool quality
- significant impact in community

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Optimization of the facial rig **mechanics**



Bones

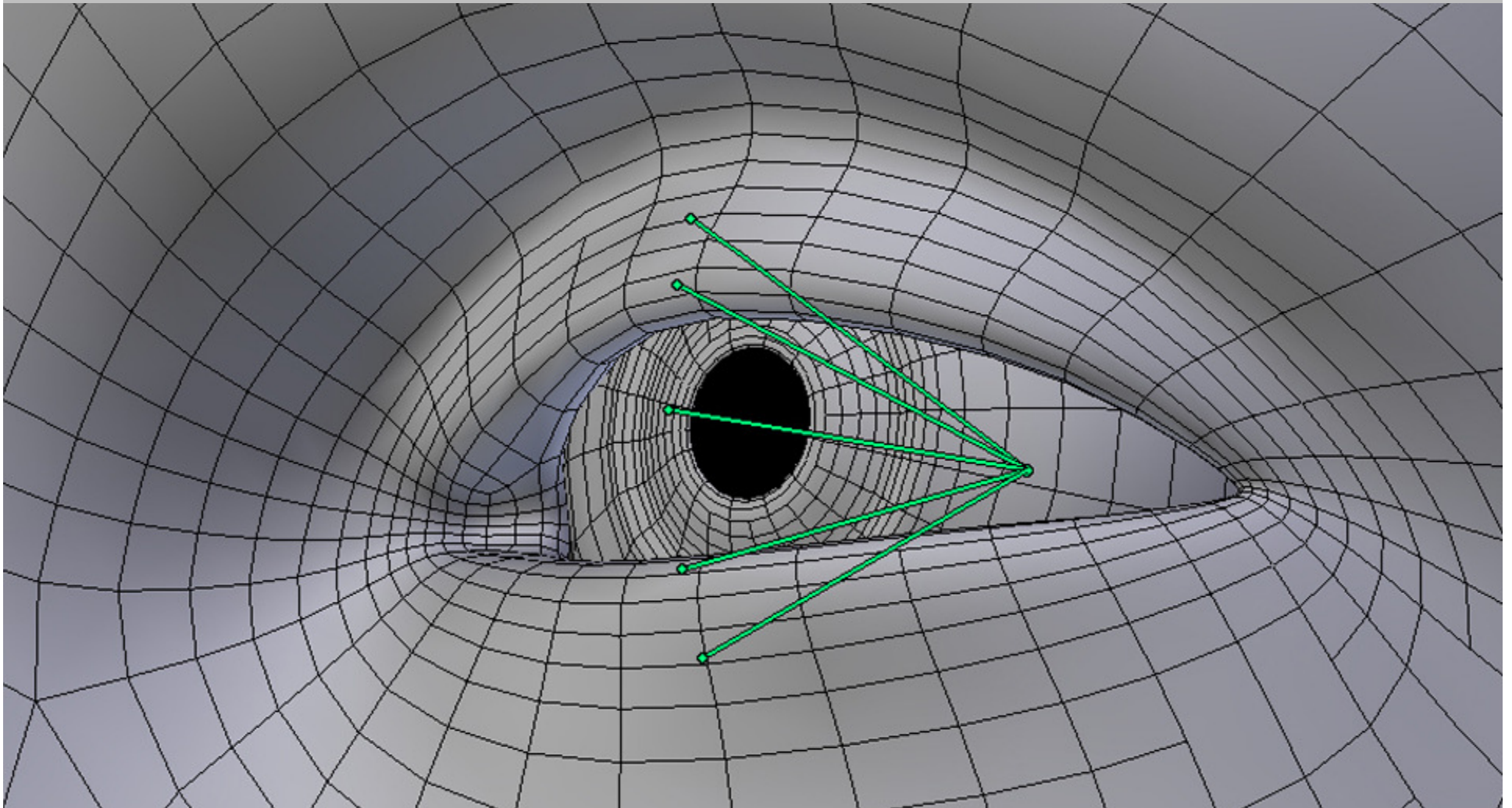


Shape-keys

P. Bastos, Generic and Certified Facial Rig Mechanical Approaches for Key Frame Character Animation, Proc. CONFIA'2012

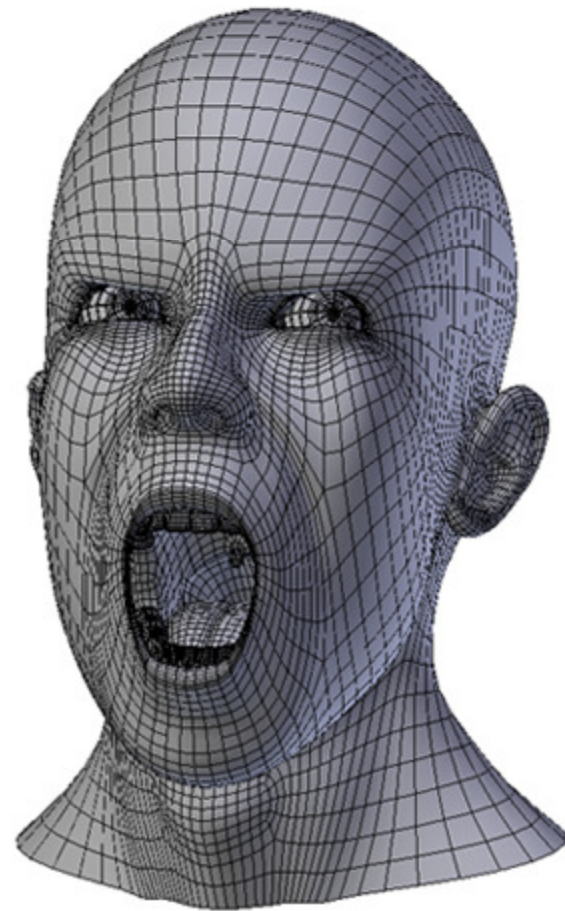
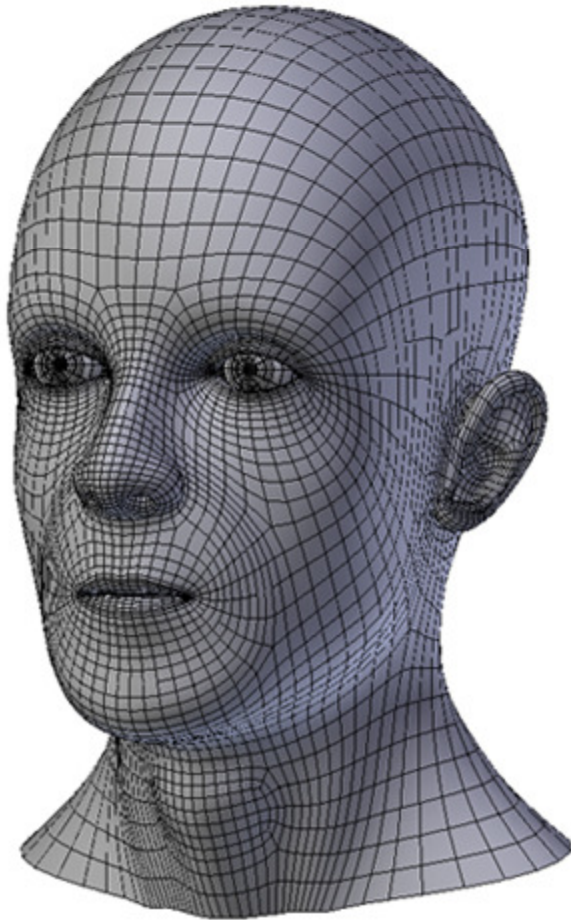
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Optimization of the facial rig **mechanics**



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Overall facial expression detail



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Optimization of the facial rig **controls**

A multimodal rig interface for facial animation:

- Window-based
- Camera-based
- Viewport-based

VIDEO

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User experiment in Blender PT Conference

problender.pt/conf2013



Optimized Facial Rigging and Animation

User Experiment Design

- Training Stage

group (computers room)

- Task Stage

individual (experiment room)

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Training stage



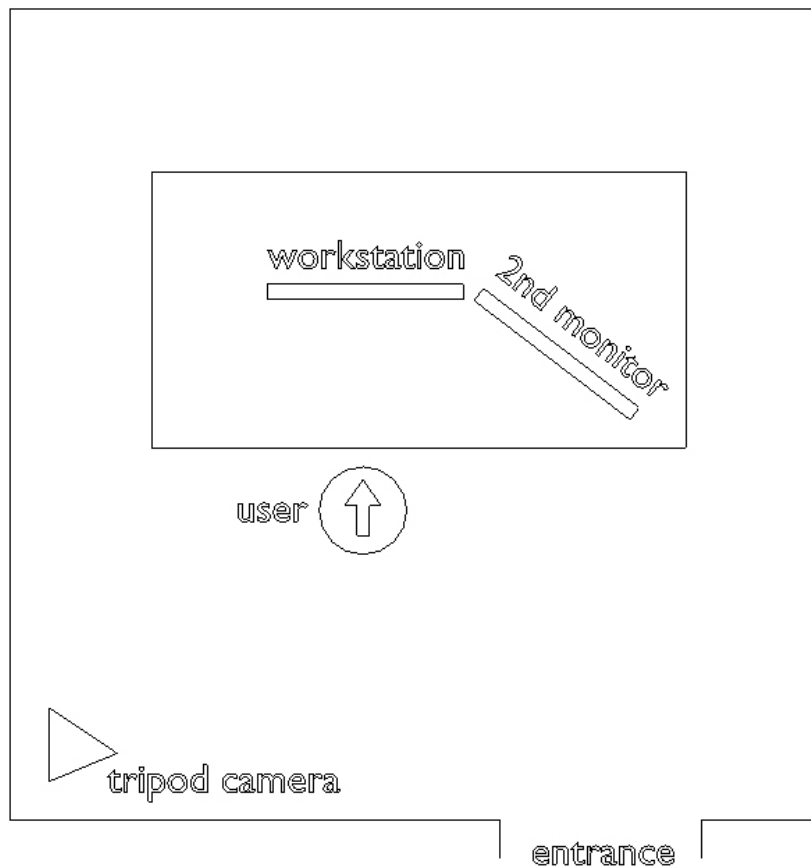
Training system freely

- group use with 18 computers (20 min.)
- skills questionnaire + consent sheet (10 min.)



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Task stage



Building poses for the human face

- individual poses (8 min.)
- interview (4 min.)

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Thank you

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