

Research Overview of UH Computer Graphics and Interactive Media Lab



Computer Graphics and Interactive Media Lab (CGIM) at University of Houston

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UH CGIM Lab Website: <http://graphics.cs.uh.edu>

Talk Outline

● Current Research Projects

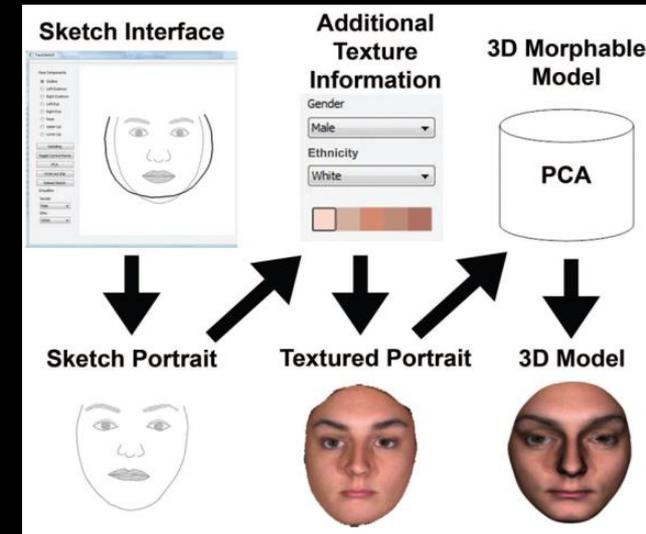
- Facial Animation and Virtual Humans
- Character and Crowd Animation
- GPU Computing and High-Performance Graphics
- Human Computer Interaction and Gaming



Facial Animation and Modeling

Research Projects

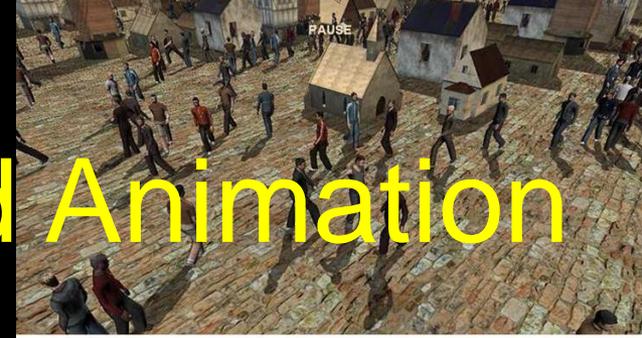
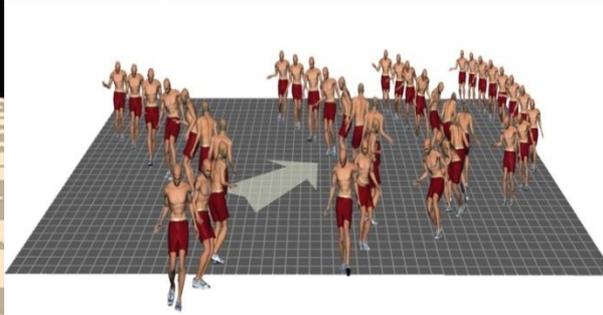
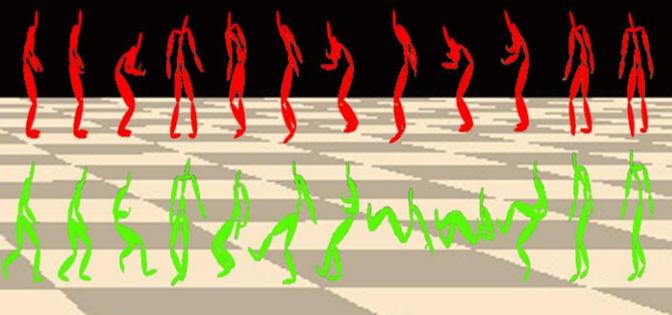
- Live Speech Driven facial animation (lip-sync, head movements, and eye motions)
- Automated facial animation editing
- Perceptually-guided facial animation
- Sketch-based Facial modeling



Character and Crowd Animation

Research Projects

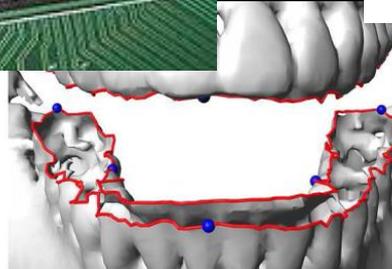
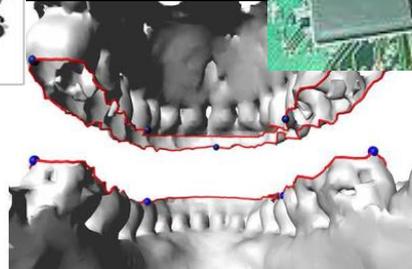
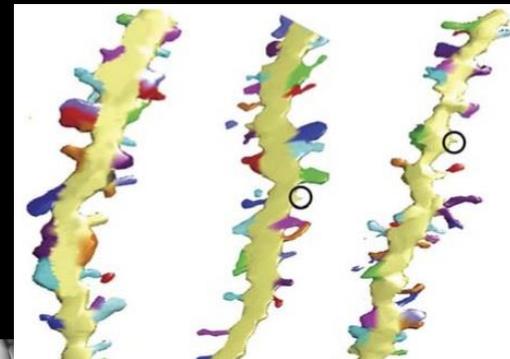
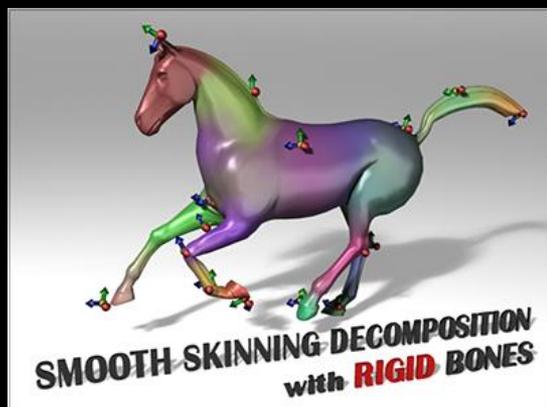
- Online auto-labeling of multiple interacting motion capture subjects
- Human motion data compression and retrieval
- Context-aware crowd motion diversification
- Crowd formation sketching and synthesis from examples



GPU Computing & High-Performance Graphics Algorithms

Research Projects

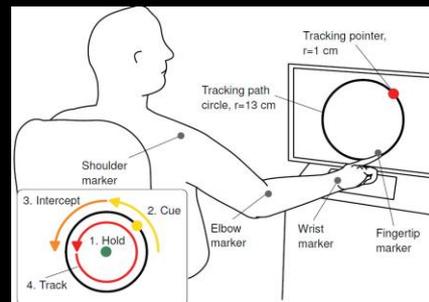
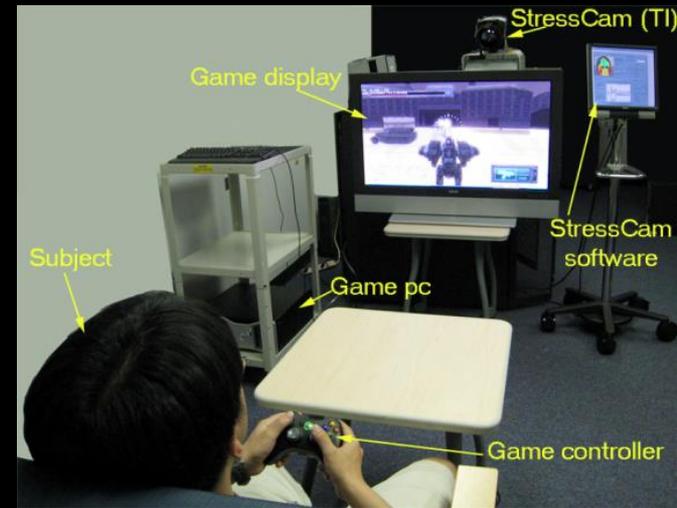
- Skinning Decomposition Algorithms
- Raytracing on Multi-GPU Systems
- Energy-efficient GPU and graphics computing
- Interactive geometric computing algorithms



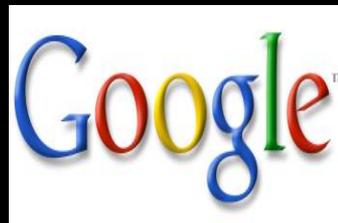
Human Computer Interaction and Gaming

Research Projects

- Improving gaming experience via adaptive difficulty adjustment
- Virtual environment augmented robot-assisted rehabilitation
- Text-driven avatar interface for mobile computing
- Gesture-interface based, mixed reality social game on smartphones



Acknowledgments



UH CGIM on Youtube

<http://www.youtube.com/UHCGIM>

