Bachelor & Masters Theses 2017
Skeletex Research

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Skeletex
RESEARCH

About us

- **Freelancing research and development group**
  - Martin Madaras
  - Adam Riečický
  - Michal Mesároš
  - Martin Stuchlík
  - Michal Piovarči

- State of the Art Applied Research
- Cooperation with Leading Tech Companies
  - Photoneo
  - Synertial

Implementation / Rules

- C++
- OpenGL
- GLSL shaders
- OpenCL, CUDA
- Unity, Unreal Engine

- TeX, english
- GIT, SVN - source code repository
- Meetings / Hangouts - once per weeks

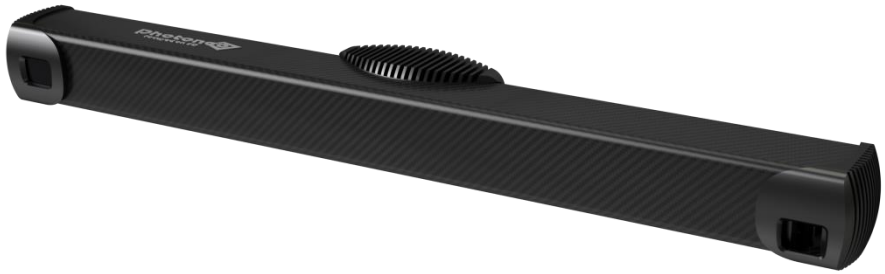
- Implementation in form of libraries and standalone classes

Our Research Topics

- Polygon Mesh Processing
- Automatic Skeletonization of Mesh Models
- Scanning of Models
- 3D Reconstruction
- Mesh GPU Tesselation and Displacement Maps
- Motion Capture
- Human Skeleton Fitting

Ultimate Goal

- Real-time Capturing of Human Performance and Reconstruction Rendering in Virtual Reality



VR Pipeline

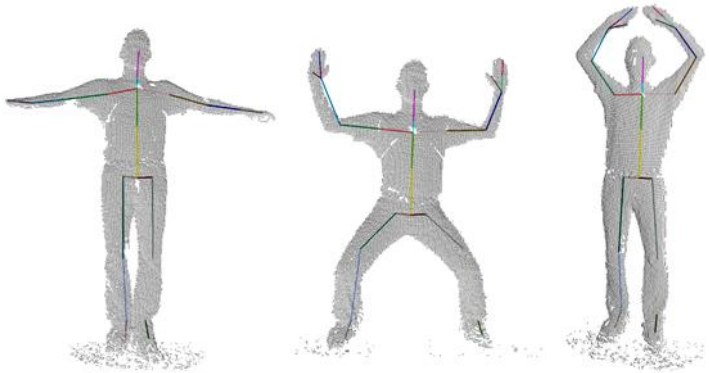
- Skeleton and Surface Tracking
- Surface Reconstruction Fusion
- Compression & Data Streaming
- Surface Reconstruction from Textures and Skeleton
- Rendering & Applications

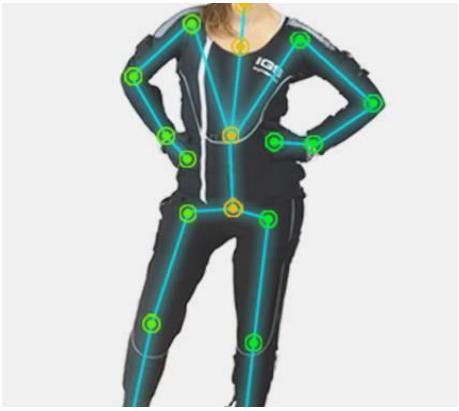
Skeleton Displacement Mapping

3D face scan reconstruction

Bachelor Theses

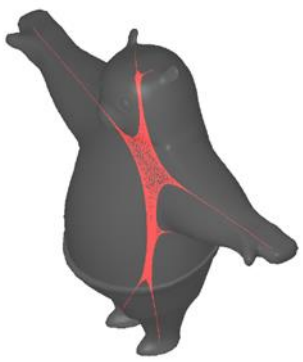
- Vulcan Viewing Library
- Depth Camera Streamer
- Skeleton Fitting into Point Clouds
- Measurement of Human Body using RGB Camera
- Virtual Reality Rendering of Music Performance

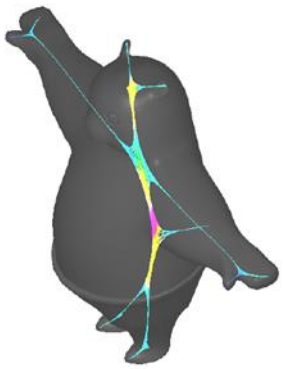




Masters Theses

- Optical Calibration of Inertial Mocap Suits
- Skeleton Extraction and Parameterization
- Texture-space Diffusion using STM
- Skin Rendering in VR
- Skeleton Tracking via Deep Learning





Other University Projects

- OSVR HDK2
- HTC Vive
- Oculus Rift

Partners


Photoneo
Focused on 3D


Synertial


METACELL


OpenWorm


UNIVERSITAS COMENIANA BRATISLAVENSIS
MCMXIX


TU
WIEN
TECHNISCHE
UNIVERSITÄT
WIEN


UNIVERSITAS
MASARYKIANA BRUNENSIS

Thank you !

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M113 --- FTLab