

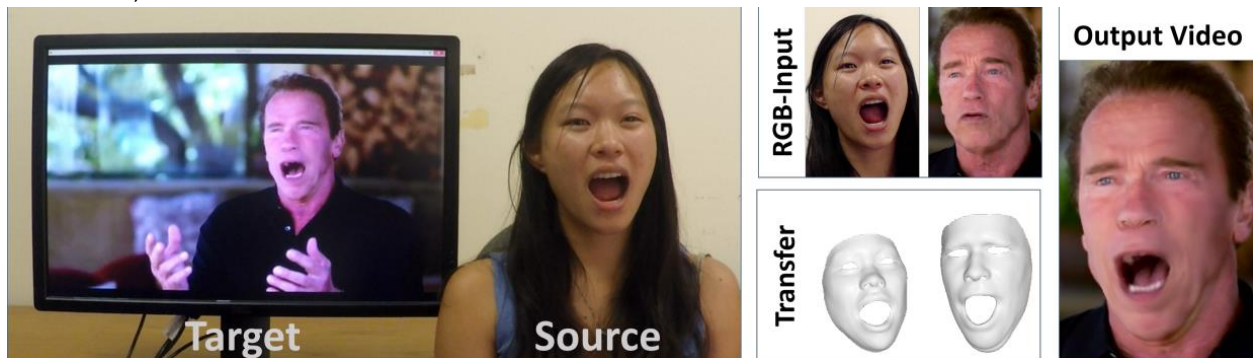
Visual Computing:

3D Reconstruction, Semantic Scene Understanding, and Markerless Motion Capture

Full-time Ph.D. positions and PostDocs are available (starting Q2 2017) at the Technical University of Munich (TUM) at the intersection of computer graphics, 3D vision, and machine learning.

TUM has a strong research focus on digitizing real-world environments and semantic scene understanding. This area is heavily inspired by the rapid progress of range sensing technology, such as the Microsoft Kinect and LIDAR systems, as well as the availability of large data collections. In addition to this newly-available sensor technology, algorithmic advances in **deep learning** and convolutional neural networks open up a wide range of opportunities for cutting-edge research in static and dynamic 3D capture; for instance, targeting applications in **virtual and augmented reality**.

Bottom line, we'll do cool stuff like this:



Face2Face (state-of-the-art face tracking): <https://www.youtube.com/watch?v=ohmajJTcpNk>

BundleFusion (real-time global 3D reconstruction): <https://www.youtube.com/watch?v=kelirXrRb1k>

FaceVR (face & eye tracking in VR): <https://arxiv.org/pdf/1610.03151.pdf>

ScanNet (Semantic scene understanding w/ 3D-CNNs): <http://www.scan-net.org/>



If you are interested in applying, you should have a strong background in numeric optimization, be 'fluent' in C/C++, and have at least some experience with scripting languages that are used by modern deep learning frameworks (e.g., Lua or Python). However, we are specifically looking for researchers that are excited and self-motivated, and whose goal is to revolutionize the state of the art in 3D Vision, computer graphics, and machine learning. Good English skills are essential. These are full time positions, with payment and benefits according to the German public service positions (TV-L E13, 100%); for a Ph.D. position, a Masters degree is required.

To apply, send your **CV**, your latest **transcripts** (BA & MA), and a brief **research statement** to Matthias Niessner (niessner@tum.de). Please also ask two references (who know you well) to directly email **recommendation letters** to Prof. Niessner in order to support your application.