

## Equipment:

ZESS provides on a floor space of about 1.500 square meters (office and laboratory space) modern equipment for the three main research topics.



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### *High Level Information Extraction and System Integration*

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This area is supported by following facilities:

Equipment for wearable computing / wearable sensing:

- Smart glasses such as Google Glass various Head Mounted Displays (HMDs)
- Clinically-Validated wearables for long-term biophysical measurements
- Miniature and wearable RGB-D sensors
- System-on-chip platforms for wearable and real-time sensor data analysis

Robots for illustrating computer vision algorithms

ToF-based and other depth cameras for online range image fusion and scene reconstruction (also on mobile devices)

Setup for interactive visual analysis:

- To extract scene lighting and material parameter (Inverse rendering)
- To perform online range image fusion and scene reconstruction (also on mobile devices)
- To investigate super-resolution techniques for imaging beyond the diffraction limit
- To visualize high dimensional multi- and hyperspectral sensor data (e.g. from confocal Raman microscopy)

High performance workstations, specifically equipped with multiple GPUs for large scale optimization problems such as training deep neural networks

“Industrie 4.0” arrangement (test field) with:

- PLC based control system,
- Sensor-Actor Network,
- High precise Pick&Place Robot,
- Distributed Signal processing,
- Image processing,
- Industrial communication structure,
- IoT communication support,
- Database management,
- Secure edge computing,
- Cloud / mobile computing,
- Engine test facility and
- Multi-machine management