



UNIVERSITÄT
LEIPZIG

VIRTUAL REALITY LAB

Research group „Softwarevisualisation in 3D and VR“

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<http://home.uni-leipzig.de/svis/VR-Lab/>

OVERVIEW

- HTC Vive
- Oculus Rift
- Leap Motion
- Power Wall
- Flashforge Creator Pro 3D-Printer



HTC VIVE

HTC VIVE HEADSET



HTC VIVE HEADSET

- Resolution: 2160 x 1200 (1080 x 1200 per eye)
- Refresh rate: 90 Hz
- Field of view: 110 °
- Weight: 555 g
- Version: consumer version 2016
- Adjustable straps and interchangeable inserts
- Fitting most glasses
- Eye relief adjustments
- Front-facing camera allows seeing even with headset

HTC VIVE CONTROLLER



HTC VIVE CONTROLLER

- Designed exclusively for VR
- Intuitive controls and gestures
- Realistic haptic feedback



HTC VIVE BASE STATIONS



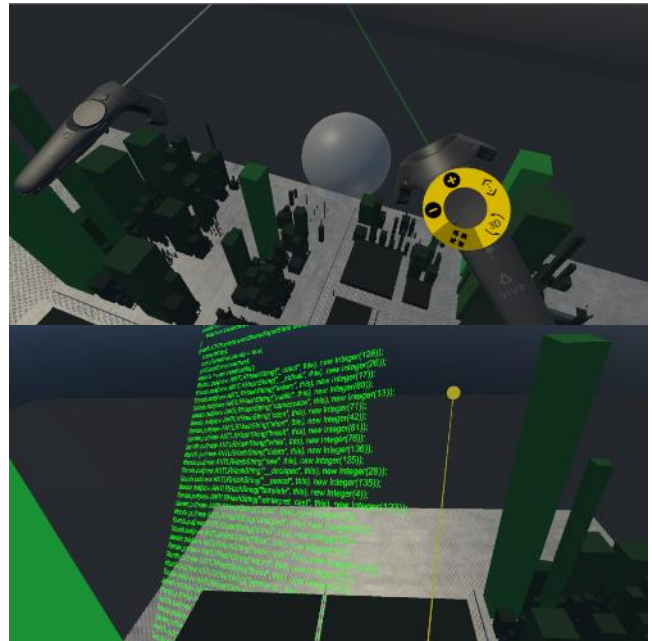
HTC VIVE BASE STATIONS

The HTC Vive Base Stations` Lighthouse System enables the fade in of the room tracking borders within the VR app, thereby helping to avoid unwanted collisions with walls and furniture

- 360-degree play area tracking coverage (5 m x 5 m)
- Wireless syncing
- Fits standard threaded mounting points

APP-EXAMPLE „CITYVR“

- The application creates a three dimensional city based on the source code of a software system
- The controllers allow to inspect the code fragments of single methods and classes





OCULUS RIFT

OCULUS RIFT

- Resolution: 1280 x 800 (640 x 800 per eye)
- Refresh rate: 60 Hz
- Field of view: 110 °
- Weight: 470 g
- Version: Development Kit 1

APP-EXAMPLE „TUSCANY DEMO 2.0“

- The Tuscany Demo 2.0 allows to explore a southern country house
- The headset allows to look around, in order to move you have to use the keyboard





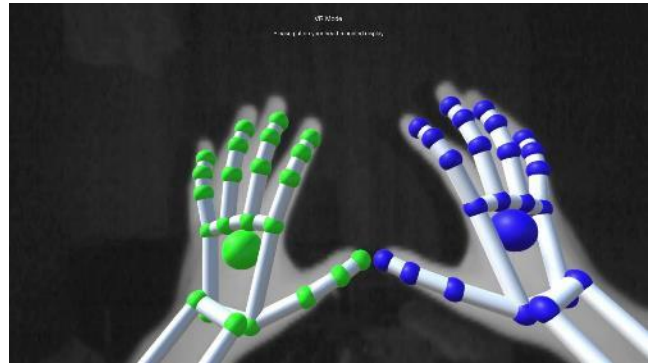
LEAP MOTION

LEAP MOTION

- Three infrared sensors track hand movements which occur in a „cone“ above the Leap
- The tracked movement data is transferred to a PC via USB; the PC calculates the intended input
- Up to four hands can be tracked simultaneously
- Desktop recording mode
(Placement on a table)
- VR recording mode
(Placement on the headset)

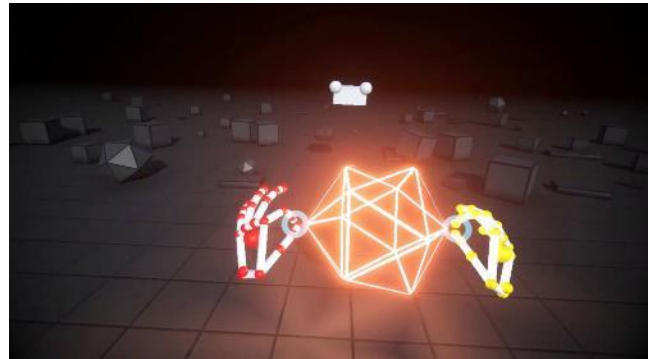
APP-EXAMPLE „HAND TRACKER“

- Allows simultaneous tracking of up to four hands
- Test application for verifying the correct functionality of the Leap Motion



APP-EXAMPLE „BLOCKS“

- Creation of various geometric forms
- Interaction among created forms





POWER WALL

POWER WALL

- The Power Wall is a combination of three single frame pictures into one huge composed picture
- This is made possible due to the settings within „NVIDIA Mosaic Mode“



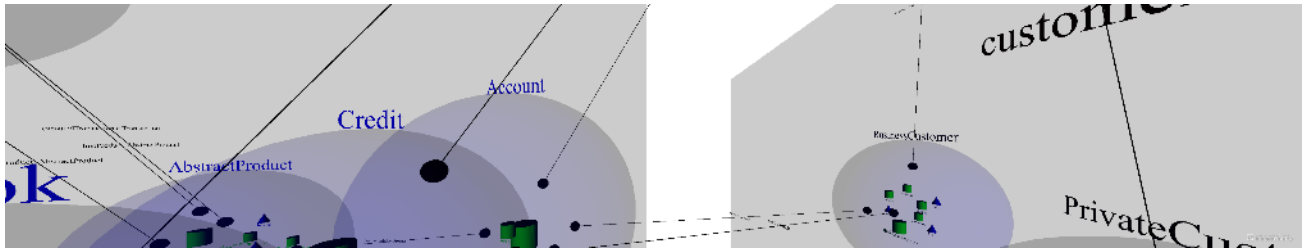
NVIDIA 3D VISION – GLASSES AND SENSOR

- NVIDIA shutterglasses allow viewing content in 3D
- The glasses are controlled by a timing signal that allows the glasses to alternately block one eye, which enables the display of a 3D effect



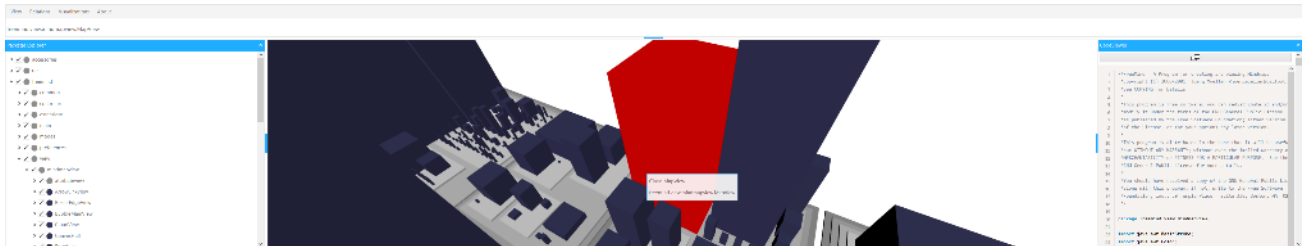
APP-EXAMPLE „X3D“

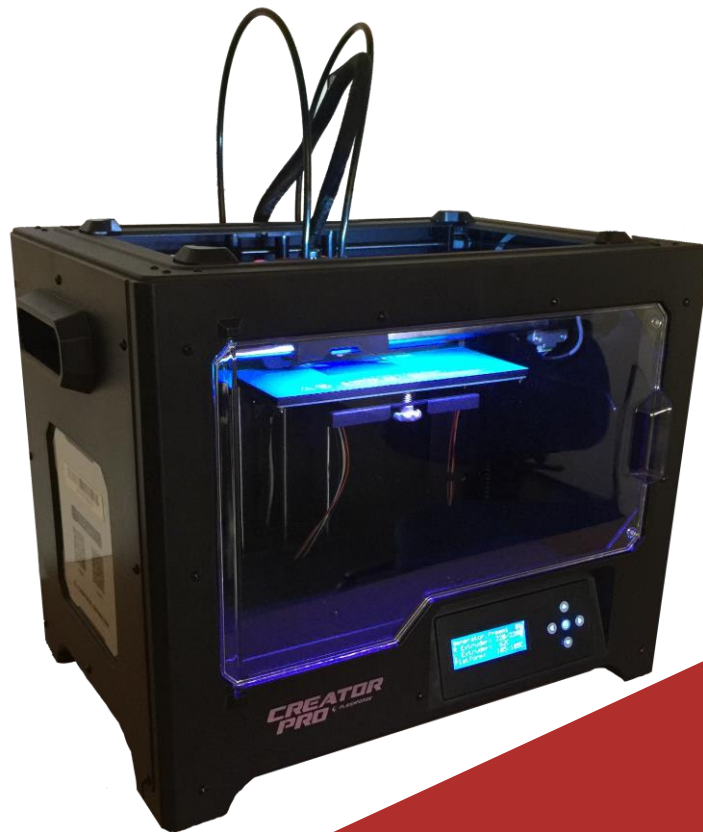
- X3D models can be viewed in 3D by using the NVIDIA Shutterglasses



APP-EXAMPLE „GETAVIZ“

- The Power Wall can be used for interactive exploration of huge software systems

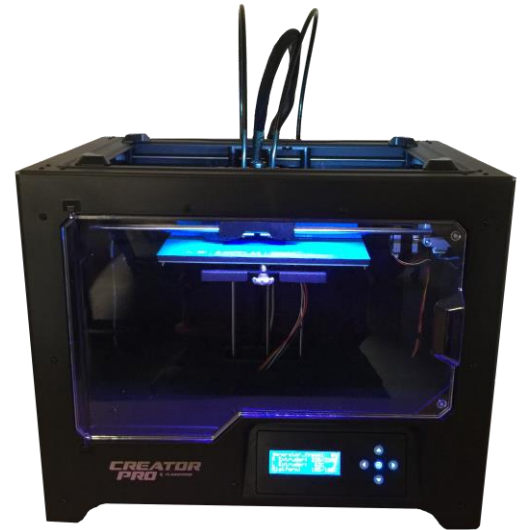




FLASHFORGE CREATOR PRO

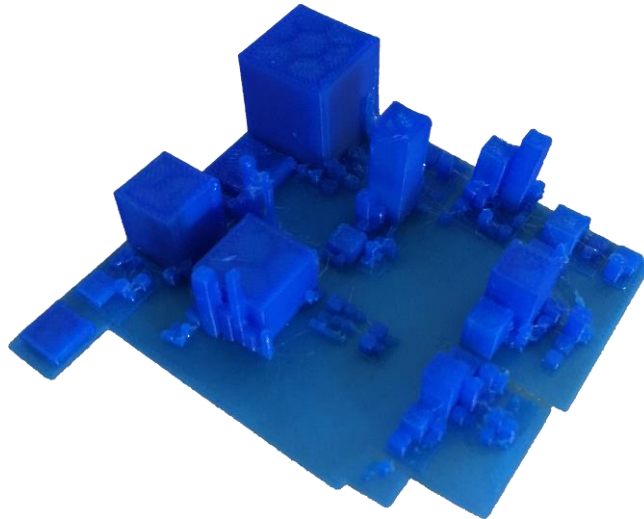
FLASHFORGE CREATOR PRO 3D-PRINTER

- Filament: PLA, ABS, PVA
- Amount of Nozzles: 2
- Print Speed: up to 100 mm/s
- Printing Technology: Fused Filament Fabrication
- Printable over:: USB, SD
- Formats: STL, OBJ



APP-EXAMPLE „CITYMETAPHER“

- With the 3D printer software visualizations for different metaphors can be printed out.





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THANK YOU!

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