

# Definition of Bachelor Thesis Project

## CAVE Auto-Calibration

ID IKLU1-1-15

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Assignment The goal of this bachelor thesis is the development of a fully automated web based CAVE configuration and calibration utility. The stereo calibration and alignment of the 8 CAVE projectors is a time consuming and complex procedure. Until now this had to be done all manually.

The thesis goal is to completely automate this procedure with the help of web cameras for image acquisition and automated pixel exact projection alignment based on the analysis of projected test images. All projectors can be completely remote configured through commands sent over a serial interface for which dedicated Raspberry Pi computers are used.

Additionally, this calibration tool should be integrated into the previously developed web based CAVE Cockpit, which serves as a web front end to control all components of the CAVE.

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