

# Mfive



the 2010/11 CAAD MAS class

**RGB+D: Computer Vision & Architecture**

„Computer vision is the science and technology of machines that see, where see in this case means that the machine is able to extract information from an image that is necessary to solve some task. As a scientific discipline, computer vision is concerned with the theory behind artificial systems that extract information from images.“ (*Wikipedia*)

In the course, we want to explore the potential of Computer vision for Architecture. Open source Libraries for Computer Vision are powerful tools that can be relatively easily implemented. On the hardware side, with the Kinect -Camera, Microsoft sells a cheap device for 3D scanning in high-speed.

This combination gives us the possibility to develop unseen applications. While flying through the point clouds of our cameras, we will develop new design tools, experiment with new ways of interaction and beyond.

During the course we will work with the programming language Processing.

**1. Caryatid, revised**

In the first day students will become familiar with the Kinect Camera and its connection to Processing. They will reinterpret the Caryatid motif: half human / half architecture! Their own body must be integrated, using the Kinect-camera. The work may refer to existing architecture. The 3D-scans can compose the entire architecture or might be applied to it.

**2. Kinectic Sculpture**

The students explore new possibilities to design a three dimensional object by combining algorithms and the 3D Camera. Interactive design tools will be developed, and we will search for different perspectives on space and time.

**3. Shadows & Agents**

In this assignment, the electronic shadow of the space will become alive. Indirect, but intuitive, there will be a dialog between user and software, implementing methods of artificial intelligence.

**4. Individual Project**

The final project will be an installation. It can be based on ideas developed during the first tasks. It should explore the possibilities of Kinect camera. What offers us the capability to measure space in 30 frames per second?



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# RGB+D Computer Vision & Architecture

## Introduction and Tutorials

### Monday, 21.02.

9 – 12 am

Introduction in Module 5  
B. Dillenburger, H. Hao, K. Wassermann

### Tuesday, 22.02.

8 – 11 am

Rocketstart for beginners  
K. Wassermann

3 - 4 pm

Recalling Processing  
H. Hao

### Wednesday, 23.02.

1 – 5 pm

**Object Oriented Programming**  
Karsten Droste

### Thursday, 24.02.

1 – 2 pm

Lecture  
K. Wassermann

### Thursday, 24.02.- Friday 03.03

9:30 - 12 am

Processing  
B. Dillenburger

### Monday, 28.02

2 pm - 3 pm

Lecture  
K. Wassermann

### Monday, 07.03

2- 3 pm

Lecture  
K. Wassermann

## Assignments

### Monday, 21.02.

12 am

Assignment I: Caryatid Revised

### Wednesday, 23.02.

9 – 12 am

Presentation Assignment I

### Monday, 21.02.

12 am

Assignment II Kinectic Sculpture

### Monday, 28.02

10:30 am

Presentation Assignment II

12 am

Assignment III Shadows & Agents

### Monday, 07.03

10:30 am

Presentation Assignment III

12 am

Assignment IV Individual Task

### Friday, 11.03

**Intermediate Critique ZHdK**

### Friday, 25.03

**Final Presentation ZHdK**

