

# Training School on “Plenoptic Sensing”



**Date:** March 13 – 17, 2017

**Website:** [www.full-parallax-imaging.eu/TS3](http://www.full-parallax-imaging.eu/TS3)

## Venues:

- Lectures: Christian-Albrechts-Universität (CAU), seminar building at Leibnizstr. 1 (LS1 – R.209a, 3rd floor)
- Lab session CAU: Multimedia lab, Hermann-Rodewald-Str. 3 (HRS3 – R.304, 2nd floor)
- Lab sessions Raytrix: Raytrix GmbH, Schauenburger Str. 116 (main building 1, 2nd floor)
- Lunch: University cafeteria (Mensa 1), Westring 385

## Schedule:

	<b>Mondau</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>
09:00	Opening				
09:00 – 10:30	Lecture 1.1	Lecture 2.1	Lecture 3.1	Lecture 4.1	Lab Session 4
10:30 – 11:00	Coffee Break	Coffee Break	Coffee Break	Coffee Break	
11:00 – 12:30	Lecture 1.2	Lecture 2.2	Lecture 3.2	Lecture 4.2	
12:30 – 14:00	Lunch Break	Lunch Break	Lunch Break	Lunch Break	Closing
14:00 – 17:00	Lab Session 1	Lab Session 2	Visit REALEYES	Exercise 3	
17:00		Board Meeting	Trip to Laboe		
18:00	Dinner		Dinner		

## Lectures:

1. Christian Perwass, CluTec, Kiel.  
**Tutorial on lightfield capturing with a plenoptic camera.**
2. Sandro Esquivel, Post-doctoral Researcher, Kiel University.  
**Tutorial on sparse lightfield capturing with RGB-D multi-camera systems.**  
Reinhard Koch, Professor of Multimedia Information Processing, Kiel University.  
**Tutorial on color and depth image fusion and interpolation for 3D displays.**
3. Bastian Goldlücke, Professor of Image Analysis and Computer Vision, University Konstanz.  
**Tutorial on dense lightfield analysis.**
4. Karol Myszkowski, Senior Researcher, Max Planck Institute for Informatics, Saarbrücken.  
**Tutorial on perception of lightfield enabled visual cues.**  
Joachim Keinert, Chief Scientist, Moving Picture Technologies, Fraunhofer IIS, Erlangen.  
**Tutorial on lightfield video production.**

## Social Activities:

- Dinner and Bowling; Mon, 18:00 – 20:00; Rick's Café, Eckernförder Str. 85, 24116 Kiel
- Board Dinner; Tue, 19:00 – 21:00; Luzifer Fördeblick, Kanalstr. 85, 24159 Kiel-Holtenau
- Visit to REALEYES; Wed, 14:00 – 16:30; REALEYES, Am Kiel-Kanal 2, 24106 Kiel
- Social Dinner; Wed, 18:00 – 22:00; El Meson Playa, An der Au 2, 24235 Laboe

## Lab Sessions

### Exercise Topics:

- **CAU:** Multi-Camera Rig Calibration, Light Field Capturing with a Multi-Camera Rig, Image and Depth Image-Based Rendering.  
Supervisor: Sandro Esquivel.
- **Raytrix 1:** Light Field Microscopy, Endoscopy, 3D Vision Stitching, Inspection.  
Supervisor: Arne Erdmann.
- **Raytrix 2:** 3D Particle Tracking, Particle Image/Tracking Velocimetry (PIV/PTV), High-Speed Video Analysis.  
Supervisor: Arne Petersen.
- **Raytrix 3:** RxLive Light Field Software SDK, 3D Metric Target Calibration, Dense 3D Filling.  
Supervisor: Stefano Spyropoulos.

### Exercise Groups:

- **Group 1:** Luca Palmieri, Yuan Gao, Yongwei Li, Waqas Ahmad, Elijs Dima
- **Group 2:** Gabriele Scrofani, Amir Ansari, Seokmin Hong, Daniel Ardebili, Ole Johannsen
- **Group 3:** Christos Kaspiris-Rousellis, Maydel Fernandez Alonso, Faezeh Sadat Zakeri, Ron Op het Veld
- **Group 4:** Sergio Morechini, Filipe Gama, Aron Cserkaszkzy, Oleksii Doronin

### Exercise Schedule:

	<b>Monday</b>	<b>Tuesday</b>	<b>Thursday</b>	<b>Friday</b>
<b>Group 1</b>	CAU	Raytrix 1	Raytrix 2	Raytrix 3
<b>Group 2</b>	Raytrix 3	CAU	Raytrix 1	Raytrix 2
<b>Group 3</b>	Raytrix 2	Raytrix 3	CAU	Raytrix 1
<b>Group 4</b>	Raytrix 1	Raytrix 2	Raytrix 3	CAU