Virtual and Augmented Reality I

Summer

(in German: Virtual and Augmented Reality I)

Module-ID: FIN-INF-120527

Abbreviation	Credit Points	Semester	Term	Duration	Language	Level
VAR1_MA	6	Summer	2.	1 Semester	english	Master

Link:	LSF
Limited accessability:	
Responsibility:	Christian Hansen
Lecturer:	Christian Hansen
Classes:	• Lecture *Virtual and Augmented Reality* • Exercise class *Virtual and Augmented Reality*
Applicability in curriculum:	- M.Sc. VC: Visual Computing

Intended learning outcomes:
Students who complete this module will acquire in-depth knowledge in the areas of human-computer interaction in the context of VR/AR, perceptual aspects of VR/AR, VR/AR and input/output devices. In addition, they will gain an understanding of the technical fundamentals of tracking, VR/AR visualisation/rendering and AR registration. In the associated seminar, students develop, test and evaluate a VR/AR software tool in a team. Students will learn how to design, program and test a VR/AR system. In these team projects, students learn how to solve social and technical conflicts. In addition, students present their project results in an oral presentation and justify the results achieved by their team. Students who complete this module will learn how to supervise an

interdisciplinary project team. They will learn how to analyse their role in the team and their individual contribution to the team's outcome.

Content:
This module covers fundamentals and advanced techniques in the area of VR/AR systems. Students will gain the theoretical foundation needed to design, implement, improve, and evaluate VR/AR systems. In addition, the theoretical foundations can be applied in a team project that accompanies the lecture. Following topics in the field of VR/AR are addressed:

- Introduction to VR/AR systems
- Perceptional aspects
- Input devices
- Output devices
- AR components and types
- Interaction techniques

Workload:
56 contact hours + 124h self study

Pre-examination requirements:	Type of examination:	Teaching method / lecture hours per week (SWS):
	oral exam	• Lecture (2 SWS) • Seminar (2 SWS)

Prerequisites according to examination regulations:	Recommended prerequisites:
	Introduction to Computer Graphics

Media:	Literature:
	Virtual und Augmented Reality (VR/AR) Grundlagen und Methoden der Virtuellen und Augmentierten Realität herausgegeben von: Prof. Dr. Ralf Dörner, Prof. Dr. Wolfgang Broll, Prof. Dr. Paul Grimm, Prof. Dr. Bernhard Jung Verlag: Springer Berlin Heidelberg

Comments:

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