Technology
Arts Sciences
TH Köln

Course Manual FTV

Research Project Virtual and Augmented Reality

Version: 1 | Last Change: 30.09.2019 13:46 | Draft: 0 | Status: vom verantwortlichen Dozent freigegeben

General information

Long name	Research Project Virtual and Augmented Reality
Approving CModule	FTV_MaMT
Responsible	Prof. Dr. Stefan Grünvogel Professor Fakultät IME
Valid from	winter semester 2020/21
Level	Master
Semester in the year	every semester
Duration	Semester
Hours in self-study	132
ECTS	5
Professors	Prof. Dr. Stefan Grünvogel Professor Fakultät IME
Requirements	Knowledge of VR and AR terms and the competence to create VR / AR applications. Basics of experiment design and statistical evaluation.
Language	English
Separate final exam	Yes

Literature

Relevante Foschungsliteratur. z.B IEEE VR, EuroVR, Siggraph, Sigchi usw.

Final exam

Details	The research process is accompanied by the lecturers (research-based learning). The research process, the research results and the presentation of the results are evaluated.

Minimum standard	Research process - Documentation quality: Some minor errors in the literature references (e.g. not all authors mentioned), literature research is sufficient. - Reflection on the procedure: The procedure is clearly justified. Research results - Quality Documentation: The presentation of the results of the question is only in a few places unsystematically. - Critical analysis and evaluation of your own results: The results are critically and reflectively examined in some places with regard to their significance and expressiveness. Possible influences of the approach are critically questioned in places. Presentation - Comprehensibility: The presentation of the results is mostly systematic and comprehensible. - Adaptation to the target group: Over- or underestimates the previous knowledge of the audience in a few points.
Exam Type	EN schriftlicher Ergebnisbericht

− Lecture / Exercises

Learning goals

Goal type	Description
Knowledge	Explain and compare data structures and algorithms for VR/AR applications. Describe multimodal user interfaces. Describe input and output devices as well as specific hardware of virtual and augmented reality. Explain algorithmic and mathematical basics.
Skills	Summarize and present scientific literature in the field of virtual and augmented reality. Explain and compare advanced data structures and algorithms for VR/AR applications. Use tools and methods for the development of VR/AR applications and further develop advanced technologies in VR and AR. Legal and ethical framework conditions and rights of use will be considered. Cross-phase quality assurance and application of scientifically sound and comprehensible methods as well as subject-specific standards. The results of the research will be documented in a comprehensible manner. The results will be presented to a specialist audience in a treatise that meets scientific standards.

Special requirements

none

Accompanying material	Leitlinien zur Sicherung guter wissenschaftlicher Praxis (DFG)
Separate exam	No

Expenditure classroom teaching

Type	Attendance (h/Wk.)
Project	1
Tutorial (voluntary)	0

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