Projekt modul beskrivelse

Oplysninger om modulet
Titel: Visual computing – menneskelig perception
Type: Projekt modul
Undervisningssprog: Dansk og engelsk
Undervisningssted: Campus København

ECTS point: 15 ECTS

Periode: 1. september 2022 – 31. januar 2023

Placering
3. semester, B.Sc. i Medialogi

Semesterkoordinator og sekretariatsdækning
Georgios Triantafyllidis (koordinator), Elsebeth Andersen (sekretær)

Fagligt indhold og sammenhæng med øvrige moduler/semestre
Den formelle beskrivelse af modulet findes i studieordningen:

https://moduler.aau.dk/course/2022-2023/MSNMEDB3211C?lang=da-DK

In this module students will create a complete visual computing solution. This includes recording, analyzing and synthesizing visual data through a computer. For example, interactive digital media can use cameras and image processing to detect and respond to movement and behavior. We can also use digital media to synthesize images to our eyes, applications with Virtual (VR) and Augmented reality (AR) rely on knowledge of the human visual system, that must be considered to ensure a good experience.

Visual computing covers a range of scientific fields, including mathematics, image processing, pattern recognition, graphics and artificial intelligence. In the context of media technology, visual computing leads to problems such as:

How can we make computers "see" and recognize objects from video? How can imaging techniques be used to create new ways of interacting with a computer? How can we use knowledge about the visual system in the design of new digital media? How can mathematical modelling be used to describe, simulate and render high fidelity virtual environments?

Mål
To succeed in this module the student must:
- know the terminology within visual computing, image processing and human vision
- be able to list and describe methods and algorithms that can be used to solve visual computing tasks
- be able to explain the mathematical basis for visual computing
- be able to analyze a problem and propose a solution that uses relevant theories and methods from visual computing
- be able to design a requirements specification for a visual computing system
- be able to handle planning and implementation of a project and handle complex development-oriented tasks during the project work as well as contribute to the project group's work and results
- be able to justify the choice of methods, models and other tools used in the project work, as well as assess the project's problem in a relevant professional and theoretical context
- be able to evaluate how well the system works using the standard goals and methods of the field
- be able to present the above knowledge and skills (using correct terminology) orally and in a written report.
- be able to identify own learning needs for continued development and learning within the subject area

Omfang og forventet arbejdsindsats
15 ECTS, modsvarende 375-450 timer, der bruges i gruppearbejde; vejledningsmøder og en gruppeeksamen (inkluderet forberedelser). Gruppen skal aflevere en længere projektrapport med medfølgende interaktiv software eller hardware system og en video hvor projektet forklares.

Deltagerforudsætninger
Deltagerforudsætninger er beskrevet i modulbeskrivelsen (se link ovenover).

Eksamen
Modulet eksamineres gennem en standard gruppe-baseret projekteksamen. Se studieordningen for evt. yderligere detaljer vedr. krav, eksamination og bedømmelse. Kurset i Billedbehandling evalueres sammen med semesterprojektet.

Det er en forudsætning for deltagelse i projekteksamen, at komplet projektdokumentation er rettidigt indleveret (se eksamensordningen).