

## **Computer Science (M. Sc.)**

The Master's programme in Computer Science qualifies students for a responsible position in the development of software systems, particularly in the context of systems used for machine perception. Starting from the first qualifying degree in computer science, the course aims to deliver skills for advanced tasks in this research field using scientific methods. Hence we consider a good grasp of scientific concepts and the openness and ability to understand new academic developments as essential.

The programme includes a research oriented thesis to achieve this goal. The course begins with extended training in mathematics and algorithms with a focus on machine perception applications. For the professional skills, it offers four modules (parallel computing, knowledge-based systems, multimedia databases and invisible computing) which deliver expertise in core concepts and techniques widely applied in modern software systems for machine perception.

Three extensive modules are devoted to the various fields of application for machine perception: image analysis, information retrieval and speech recognition. Students extend and deepen their knowledge and understanding of applied topics in seminar lectures and advanced laboratory courses. The professional skills are complemented by means of general studies, such as the legal aspects of informatics, business and process management.

All modules include interactive seminar lectures which deliver the collaborative and communication skills essential for any member of a research team. The module "seminar" also enhances the communicative and presentation skills. Here, students are required to read and evaluate scientific papers and to summarise and present their main ideas. Various aspects of different modules are integrated into the module "scientific project study", which enhances the analytical skills within theoretical and practical subject areas and serves as preparation for the Master's thesis.

While producing the thesis, students demonstrate their research skills and original thinking by solving a complex problem within a period of six months. The thesis results are presented at a public viva voce and should lead to a scientific publication.