M.Sc. Visual Computing
Program at a glance

◦ Focus program on visual computing, in particular visualization, computer graphics, and computer vision
◦ Non-consecutive master program
◦ Taught in English
◦ 2 years, 4 semesters
◦ Research oriented
What is Visual Computing?

◦ Generation, processing, and analysis of visual data
  › Generation: computer games, visualization, movies, CAD, visual analytics, ...
  › Processing: noise removal, feature enhancement, ...
  › Analysis: autonomous driving, satellite images, ...

◦ Connections to many other fields: machine learning, numerical mathematics, simulation science, imaging in science, ...
Objectives of the program

- Solid foundation on techniques and methodologies
- Ability to independently solve novel problems in visual computing (or a sub-field of it)
  - Identify suitable approaches in the scientific literature and adapt / extend these for the problem
- Ability to work in larger international teams (either as member or as team lead)
Curriculum

◦ 1. semester, introductory courses: visualization, computer graphics, augmented and virtual reality, numerical methods for visual computing

 › Mandatory except you already took them
Curriculum

- 1. *semester*, introductory courses: visualization, computer graphics, augmented and virtual reality, numerical methods for visual computing
  - Mandatory except you already took them
- 1., 2., 3. *semester*, electives: computational geometry, computer vision and deep learning, flow visualization, computer-assisted surgery, visual analytics, ...
Curriculum

◦ 1. semester, introductory courses: visualization, computer graphics, augmented and virtual reality, numerical methods for visual computing

▷ Mandatory except you already took them

◦ 1., 2., 3. semester, electives: computational geometry, computer vision and deep learning, flow visualization, computer-assisted surgery, visual analytics, ... + all courses from the Dept. of Computer Science and approved courses from other departments
Curriculum

- 3. *semester*: scientific team project
  - Preparation for M.Sc. thesis and work on larger projects in a team
Curriculum

◦ 3. semester: scientific team project
  › Preparation for M.Sc. thesis and work on larger projects in a team

◦ 4. semester: M.Sc. thesis
  › Embedded in the research of the individual groups
People

- **Holger Theisel**: Scientific visualization, computer graphics
- **Bernhard Preim**: visualization, data analytics
- **Christian Hansen**: virtual and augmented reality, in particular for medical applications
- **Christian Lessig**: computer graphics, simulation
- Currently in hiring process: computer vision
Possible jobs after graduation

- Research and development in
  - Computer games (Crytek, NVIDIA, ...)
  - Medical imaging (Siemens, General Electric, ...)
  - Data science (SAP, IBM, ...)
  - Autonomous driving (Bosch, VW, ...)
  - ...
- Academia
Formal requirements (for German students)

- B.Sc. with at least 2.5 average
- C1 language certificate (or equivalent)
- One letters of recommendation
- Letter of motivation

Application (for current German students):
https://myovgu.ovgu.de
More information

- https://www.ovgu.de/mscvisualcomputing.html
- **Formal documents**
- Email me: christian.lessig@ovgu.de