Titel: AI tools to support the realisation of accessible digital media

Speakers: Dr. Lino Weist, Sanja Grimminger, Dr. Sarah Voß-Nakkour

Duration: 90-120min

Level: for all/ beginners

What to bring: Participants should bring a laptop or similar device

Notes on accessibility: The editing of videos and images is not accessible, as the interaction of moving images and sound or the recognition of image content is an important prerequisite. People with disabilities can participate in the workshop with the help of an assistant if necessary, and will also be supported by the speakers.

Our topic

When it comes to the accessibility and usability of media and digital applications, alternative texts and subtitles play a central role. Not only are they essential for people with hearing or visual impairments, but they also improve usability for everyone. At the same time, these measures require additional effort. In some areas, this is not easy to achieve. The production of media-based content is already a time-consuming task, especially in the day-to-day life of a university. Creating alternative texts or (error-free) subtitles is often simply not affordable. However, the creation of accessible content is now mandatory under the Convention on the Rights of Persons with Disabilities, meaning that all content at the university has to be accessible. This workshop will explore whether the use of AI technology can meaningfully assist in this difficult situation, and how it can facilitate the creation of alternative texts and subtitles.

Who we are and what we do

studiumdigitale is the innovation unit for technology-supported teaching and learning at Goethe University Frankfurt. One of our research areas is digital accessibility. Among the projects in this area is bambi which is short for "Barrierefreie Medien im Bildungswesen" (Accessible Media in Education).

The main goal of the project is to improve the accessibility of audio-visual teaching and learning content at Goethe University. This will be achieved by providing information resources, workshops and other knowledge transfer formats, and by using innovative tools. In a scouting process, tools for the automatic generation of transcripts or image descriptions will be evaluated. Subsequently, we make recommendations for educators on how they can create high-quality, accessible media in a resource-friendly way. Providing the educators of the Goethe University with the best possible support in designing and delivering their courses in an accessible way is the central task of all project activities within bambi.

Our workshop content

From our experience in scouting with many different AI tools, we have made a selection. During the workshop, participants will have the opportunity to try out the selected tools. Differences will be highlighted and discussed. Our objective is to provide participants with a solid basis for making decisions about the use of AI tools in their own professional setting.

Creating alternative texts for images

In the first group activity, we will look at the automatic generation of alternative texts for images. First we look at how alternative texts need to be written in general. We will then look at the different requirements for good alternative texts in different contexts. These are not trivial: the structure and scope of alternative texts will vary depending on whether images are embedded, for instance, on a fashion website or in an academic context. With a selection of graphics we want to figure out what results the tools offer and how they differ. We will then identify which tools are suitable for which usage scenarios.

Automatic subtitling with Whisper

The speech recognition system Whisper has quickly become a popular tool for automatic subtitling and transcription since its launch in 2022. In addition to English, the system supports a wide range of languages, including German. An important feature of Whisper is its compliance with data protection regulations when hosted locally on your own servers. This, combined with the fact that it's free to use, makes it a potentially valuable tool, especially in university environments where privacy and costs are often critical issues.

Within the bambi project, Whisper was tested for automatic subtitling quality. Two lecture series with different proportions of text and formulae were subject of the evaluation. The first series is from the field of sociology and is text-heavy, while the second is from theoretical physics and contains a high proportion of formulae. This selection represents the range of lecture videos at Goethe University and tests Whisper's performance in different application scenarios.

In the workshop we will explain how to install and use Whisper on your own device. However, its use is highly dependent on the device's hardware. Participants will also have the opportunity to examine a pre-created subtitle file using the original video material. Our objective is to demonstrate how Whisper works and whether it could be used in your own professional context.

Take part

As well as time for experimentation and discussion, the workshop will be an opportunity for interaction with international colleagues: How experienced are you with AI tools? What AI tools for digital accessibility are you familiar with? What impact can AI have on (digital) accessibility? What would be desirable in the future?

We look forward to your participation and an exciting, interdisciplinary exchange.