

Conversion of annotated graphics to an accessible format for visually impaired people

ACCESS@KIT - Zentrum für digitale Barrierefreiheit und Assistive Technologien

Creating accessible graphics for visually impaired people remains a challenge. Designing tactile or printed accessible graphics is a time-consuming and difficult task. This presents a significant barrier to visually impaired individuals accessing information in a graphic format

To solve this problem, we currently use AI algorithms, classical text recognition (OCR), and segmentation techniques to identify and locate elements and metadata in a given graphic.

In this bachelor thesis, the goal is to use these output elements to create a **Scalable Vector Graphics (SVG)** file that can be printed, interactively accessed on tactile displays, or used audio-tactile.

To do this, the following steps must be performed:

1. defining and evaluating templates for different types of graphics to represent the collected metadata from the graphics.
2. transfer the recognized elements into SVG.
3. evaluation of the results (printed, interactive and audio-tactile) in order to assess the quality of the generated SVG and to make corrections.

Requirements:

Students with knowledge of Python can send an email to omar.moured@kit.edu or thorsten.schwarz@kit.edu.