# Document Layout Analysis and Domain Adaptation using Deep Learning

## ACCESS@KIT - Zentrum für digitale Barrierefreiheit und Assistive Technologien

Accessible documents are becoming increasingly important for everyone. One of the most important tasks on the way there is the analysis of the document layout. An essential foundation for automated document processing. This involves automatically identifying the layout and structure of a document, including text areas, images, tables and other graphical elements.

The default layout given to the respective systems as output documents strongly influences the result. It can be native digital documents (digital from source to output format), but also scanned or photographed documents. Photographed and scanned documents often have a different layout and structure than clean digital documents, which can negatively impact the performance of deep learning models. Domain adaptation techniques can be used to solve this problem by adapting the model to the specific domain of the photographed or scanned documents.

The topic of this master thesis will be the development and implementation of domain adaptation techniques to improve the performance of deep learning models.

Our team has already worked extensively on document analysis, and we have a large dataset of annotated documents and GPU resources to perform the training. The selected candidate will have the opportunity to work closely with our team and learn more about Deep Learning, accessible data preparation, and domain adaptation techniques.

**Requirements:**

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