

“Potential of artificial intelligence in the railway sector”

The task of this master thesis is to analyse the potentials of artificial intelligence (AI) in the railway sector. At first, the basics of AI are to be compiled by describing the functionality and the definition of AI. Subsequently, current projects with the use of AI in the mobility sector with focus to railways are to be compared. The railway projects are to be clustered at least into the following categories: Wear detection in maintenance, automatic train operation, overcoming language barriers in cross-border traffic and dispatching of railway lines or networks.

Based on the projects found, it is to be described how AI is applied in each case. The impact of applying AI is evaluated respectively. For each project the advantages and disadvantages of AI over conventional systems is to be outlined. Safety-critical aspects in each application are to be identified and it is to be shown how the safety objectives can be met in the approval process.