

The Power of AI & CV for Automation in Rail and its Challenges

The future demand for mobility solutions in the world's growing cities and societies requires an increasing degree of automation in the rail industry: Automation improves passenger throughput, it improves transport offerings by allowing for a more flexible, demand responsive rail operation, saves energy and operation cost, it enables just-in-time maintenance and allows for creation and exploitation of large scale digital twins, which in turn can optimize the whole lifecycle of rail systems. Solutions to those demands need to obey to high safety standards of our industry. While traditional automation in the rail domain has been proven in the past decades to work safely, recent advances in artificial intelligence (AI), especially machine learning (ML), open new opportunities to address the new challenges effectively, while also enabling new offerings and business models. However, the ML paradigm poses new challenges to ensure safety. This talk examines those challenges and discusses solution approaches.