“The adoption of robots in Industries worldwide is on the high rise. […] The main aim of Robotics and Industry 4.0 is to improve productivity, produce high quality product at low price and meet customer expectation” [1]. While Industry 4.0 is aiming for a fully automated factoring process, nowadays robots are mainly used to support humans. Applications are for lifting objects or going to places that are too dangerous for humans. Characteristics of Industrial robots are, that they are kinetic automatons that can move into different directions along axes. A robot is specialized for one certain use case. They are programmable and have tools like grippers [2].

This report is covering an application for a robot. It will discuss how to transport goods through an area with constraints. The following pages will explain the theory and mathematics of the robot trajectory as well as the implementation of a robot in laboratory conditions.

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| [1] | A. Nayyar & A. Kumar, “A Roadmap to Industry 4.0: Smart Production, Sharp Business and Sustainable Development”, Springer Cham, 2019 |
| [2] | K. H. Grote & others, “Dubbel”, 25th edition, Springer Vieweg Berlin, 2018 |