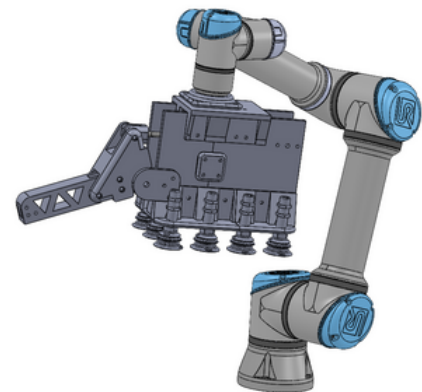


ENHANCING PACKAGING PROCESSES WITH COBOTS

This thesis details on developing an automated system for erecting and filling cardboard boxes with products, aimed at improving efficiency in packaging processes of small and medium-sized enterprises. By integrating collaborative robots and pneumatic systems, new avenues in industrial automation were explored.

The focus of the thesis was on addressing a common challenge in small and medium-sized businesses: streamlining the packaging process. The goal was to reduce reliance on manual labor by introducing an automated system that could erect cardboard boxes and fill them with wax jars. This system, developed in partnership with Odigo Consulting and Scandinavian Hair Company, integrated collaborative robots (cobots) with pneumatic systems to enhance production efficiency.



The project adopted an iterative design methodology, allowing for quick prototyping and testing. This approach was crucial in overcoming various technical challenges and in developing a versatile case erecting track and an end-effector for the cobot. The end-effector was specifically designed to handle both box erection and product packaging, a key factor in the project's success.

Upon completion, the system demonstrated its capability to efficiently and reliably automate the packaging process. This was a significant step forward in reducing manual labor and streamlining operations, particularly beneficial for the operations at Scandinavian Hair Company.

The project's results underscore the value of adaptable and iterative approaches in industrial automation. While the focus was on a specific application in packaging, the insights gained have broader implications, especially in enhancing the adaptability and efficiency of robotic systems in similar settings. The thesis contributes practical knowledge to the field of industrial automation, showcasing how collaborative robotics can be effectively implemented to address real-world industrial challenges.