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## Re-gripping mission based on analysis of slip signals for a robotic hand model

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Different approaches have been utilized to evolve robotic hands. The varied techniques have focused on integration of special sensors that were implemented in intelligent robotic hand. In this study, a robotic hand model is designed and assembled to execute an object gripping mission based on slip situations. The model is incorporated with tactile pressure sensors, which report signals measured physically when the pressure sensors and the gripped object in touch condition. The robotic hand consists of slip detection sensors to analyze slipping features that are presented as distance and velocity, which occur during slip situation. These features are detected and analyzed to provide the system with a reliable re-gripping operation. The acceleration information caused by object slipping is indicated by using an accelerometer sensor. A rotary encoder device is used for detecting slip situation features. Experimental signals of slip events were measured to be interpreted in order to achieve re-gripping tasks. Empirical results detect the correlation between the distance that an object has slipped and the required force to re-grip the object. This approach is similar to Hooke's law formula.

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## Technology for independent life - Lessons learned from world's largest test-bed for technologies for independent life

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The human race has always relied on technology to overcome major challenges. Many believe that technology will help us with the coming demographic challenge. Governments and EU are plunging billions into development of robotic devices that will take care of our future seniors. Japan is working with humanoids and androids. But are we on the right track? What the users say today? The elderly care industry has so far shown great scepticism to robotic solutions. Why? What are the differences between Europe Asia and US? What about the ethics? This presentation will answer these questions and highlight important aspects that should not be forgotten when we develop and implement robotic technologies for this industry. Robotdalen is an initiative financed by the Swedish Government and European Union that focuses on development, implementation and commercial success of robotic innovations for the health- and elderly care.

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