

Real-Time Data Processing of multiple Camera Input Streams for Vision-based Robotic Grasping

At H2T we are currently working on a robotic hand equipped with multiple RGB-cameras for feedback during grasping and manipulation of objects. The data-stream must be processed in real-time to extract information needed for the control algorithm. Therefore, we are investigating in a reconfigurable hardware concept, that can extract image information depending on the task using encoder-decoder CNNs.

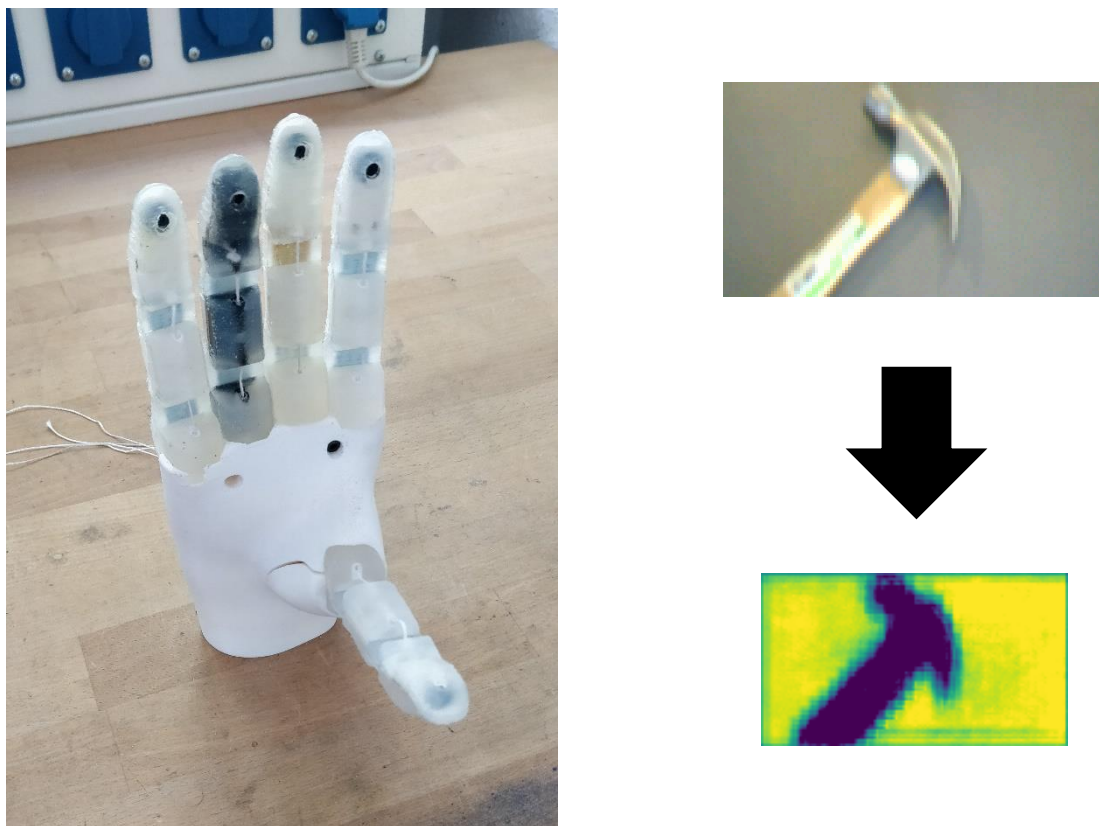


Fig.1

a) At H2T designed hand with 5 cameras for visual feedback b) Example of a segmented object in the camera image

The algorithm and implementation should be designed and tested in simulation and afterwards implemented in hardware (VHDL) on an existing in-hand controller board providing a Xilinx FPGA.

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