Duckietown Autonomous Driving Pipeline - FPGA

At LIS we want to use the Duckietown hardware and software ecosystem for experimenting with our reinforcement learning based learning classifier tables (LCT) as part of the control system of the Duckiebots: https://www.ce.cit.tum.de/lis/forschung/aktuelle-projekte/duckietown-lab/

More information on Duckietown can be found on https://www.duckietown.org/.

In this student work, we want to enable the use of the FPGA in the Lane Detection. Therefore, the different stages of the Lane Detection Pipeline should be ported to FPGA. In order to communicate with the NVIDIA Jetson Nano Platform, the ported algorithm has to connect to the XILINX PCIE DMA IP-Core.

Prerequisites

- Knowledge about VHDL and Xilinx IP-cores

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