Duckietown Bring-Up

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/.

Towards this goal, we need a (followup) working student who is improving the current infrastructure.

Towards this goal, the following three major tasks are necessary:

1. Developing an infrastructure to track and visualize measurement data of the platform (e.g. CPU utilization) as well as the executed application.
2. During this task also the source and periodicity of already provided data should be analyzed.
3. Setting up all Duckiebots incl. all their features and a pipeline to reflash them in case it’s needed.
4. FPGA-Extension: Searching for a concept, as well as implementing it.
5. Final goal: demonstration of data exchange between NVIDIA Jetson and FPGA including protocol to specify the type of transferred data

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