

Project proposal

Title: Object Recognition
 Supervisor: Alexandre Alahi
 Timeframe: Fall 2020

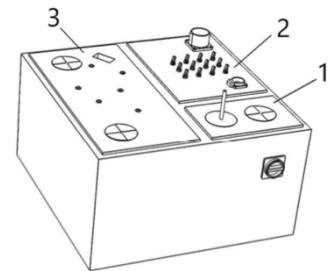
EPFL Xplore is an interdisciplinary project whose aim is to design and develop a Rover to participate in two international competitions: The University Rover Challenge and the European Rover Challenge. In particular, the detection of objects located on a control panel is part of the main abilities of the Rover.

Project description

Problematic

One of the four main tasks that will have to be achieved deals with the manipulation of a control panel. The latter will be mounted with buttons to turn, switches to flip, a keyboard, an USB slot and a socket. It will have to be handled by the Rover's robotic arm.

Therefore, the objective of this project is to use a camera placed on the arm to identify these slots and their nature.



Means

For sequential uses, the algorithm is expected to run on a 8-core 2.3 GHz ARM CPU. For parallelisable algorithms, a NVIDIA Jetson GPU unit is provided with at least 22 TFLOPs as processing power. At least 16GB LPDDR4 memory will be at disposal.

Reference documents

[1] NVIDIA Jetson Xavier AGX, <https://developer.nvidia.com/embedded/jetson-agx-xavier-developer-kit>

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