Outdoor person following using a long range laser scanner

Person following with a mobile robot is a popular research topic, since it is highly useful in human-robot cooperation. There are many applications where the robot assistants could be beneficial for humans, such as agronomy, construction, rescue or recreation.

For this thesis, the goal is to achieve person following in real-time, using a special laser range finder attached on an outdoor buggy, both of which are available at the department. The ibeo LUX laser scanner has four independent and simultaneously scanning layers, which allow getting the 3D approximation of scanned objects. This sensor also has a long range up to 200m, and is capable of coping with all weather conditions, which makes it highly adequate for outdoor applications.

As a first task, person recognition should be implemented, then the person needs to be successfully tracked in real outdoor conditions.

The topic is well researched, including some work at this department, which means that the candidate will have good literature at the disposal. Knowledge in C++ and experience with robots are required.

Communication with the supervisor is in German or English.

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