

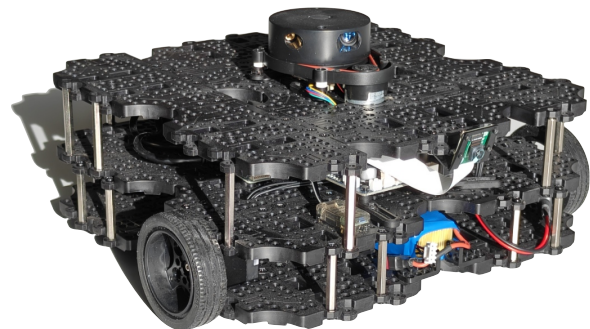
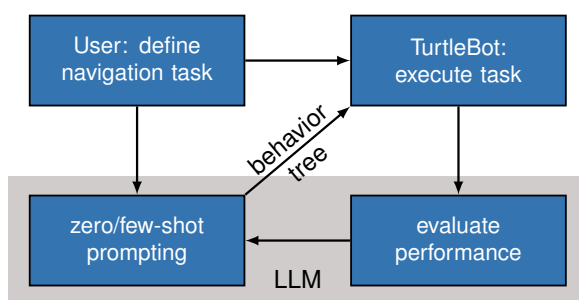
Announcement for Bachelor's Thesis

Adaptive mobile Robotics through Real-Time Reconfiguration with Large Language Models

Besides their use as chatbots, large language models (LLMs) like ChatGPT can also be integrated into other systems via an application programming interface (API). While the configuration (behavior) of robots is usually determined before deployment, LLMs offer the possibility to adapt robots in real time to changing tasks without the need for human reconfiguration.

1 Task Definition

This thesis investigates the dynamic adaptation of the “Nav2 behavior tree” of a TurtleBot3 robot through an LLM. The behavior tree defines the behavioral structure of the path planning system. First, the robot will be put into operation and equipped with an LLM interface. Subsequently, it will be evaluated to what extent the LLM can adapt the behavior tree in real time to changing task requirements or environmental conditions.



2 Requirements

- High level of self-motivation and willingness to familiarize yourself with new topics
- Interest in robotics and artificial intelligence
- Basic knowledge of programming with Python and/or C++. ROS 2 prior knowledge is not required!

Start: from now on

Language: German or English

The topic can be individually extended or restricted depending on interest and prior knowledge.

3 Contact

If you are interested, please get in touch for a non-committal introduction:

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