

# AI Foundational Models on SPOT

In this project you will be working on our new robot SPOT. YES, you get to play with the real thing!!!

Large Language Models such as ChatGPT are now even used in robotics for short-term planning. There are also smaller multi-modal Transformer models trained to transform modalities such as images and speech to text. Collectively these pre-trained models are increasingly called *AI foundation models*.

In this master thesis we want to play with some of these foundational models and test how to best combine the strengths and weaknesses of such models with fielded autonomous robot such as SPOT in everyday complex unknown environments.

You will be able to rely on a huge amount of existing software:

- you will be able to rely on SPOT's SDK for most low-level functions, incl. navigation, arm control, object detection, etc.
- CI/CD pipelines for Gitlab and good docs make implementations fast and smooth.
- You will be able to use SKIROS for easier robot skill modelling and high-level robot skill control.



## To do this work, you should have

- **very good python skills.**
- **Good knowledge of linux**
- **done a course in Robotics.**
- **Good knowledge of ROS, the Robotics Operating System. If you really want to do this project and you do not know ROS, then we can provide you with some very good on-line courses. However, you would have to do these ROS courses before(!) you start the project.**
- **Ideally, you have also a good software engineering background.**

## Contact:

Volker Krüger	Professor i Datavetenskap	<a href="mailto:volker.krueger@cs.lth.se">volker.krueger@cs.lth.se</a>
---------------	------------------------------	--