

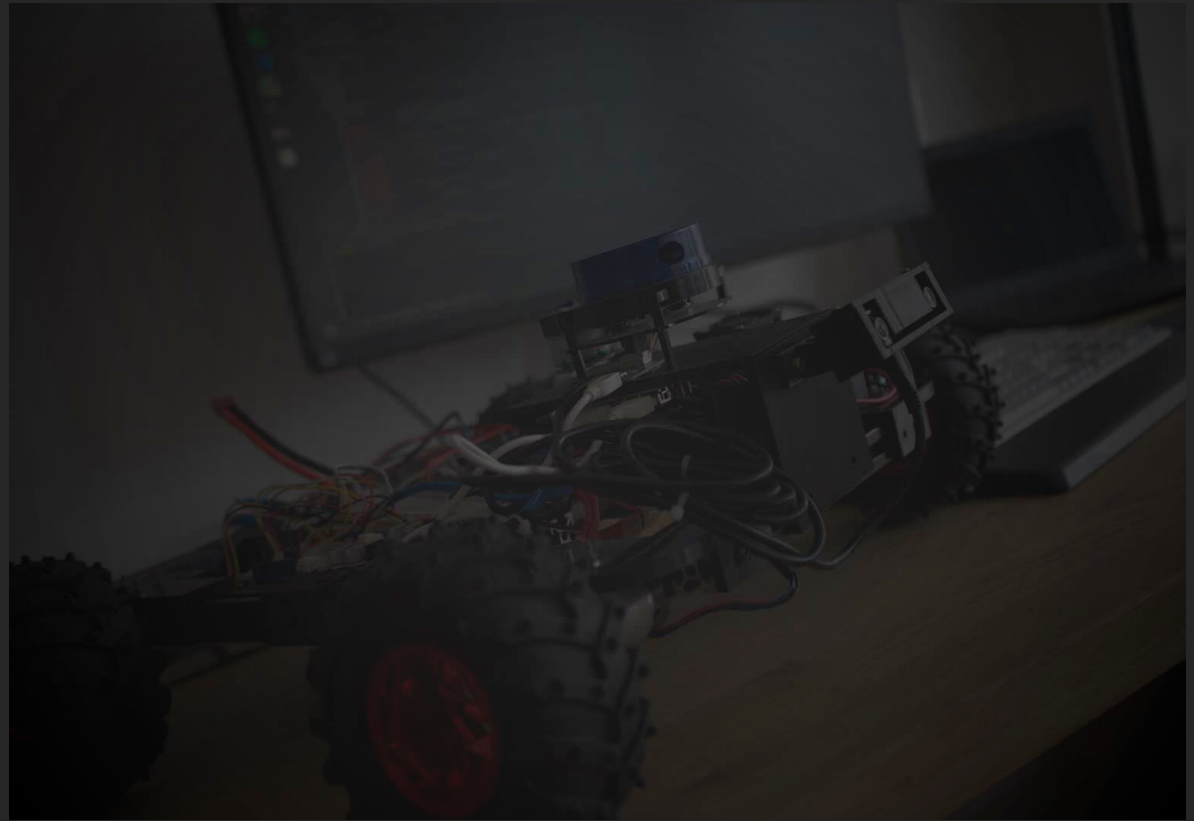
A dark, low-key photograph of a custom-built mobile robot, the MateBot, resting on a wooden desk. The robot is constructed from various electronic components, including a microcontroller board, a motor, and a camera module, all interconnected with a complex web of colorful wires. A vertical green line is positioned to the right of the robot's main body. In the background, a laptop and a keyboard are visible, suggesting a workspace or laboratory environment.

MateBot

Intelligent autonomous mobile robot

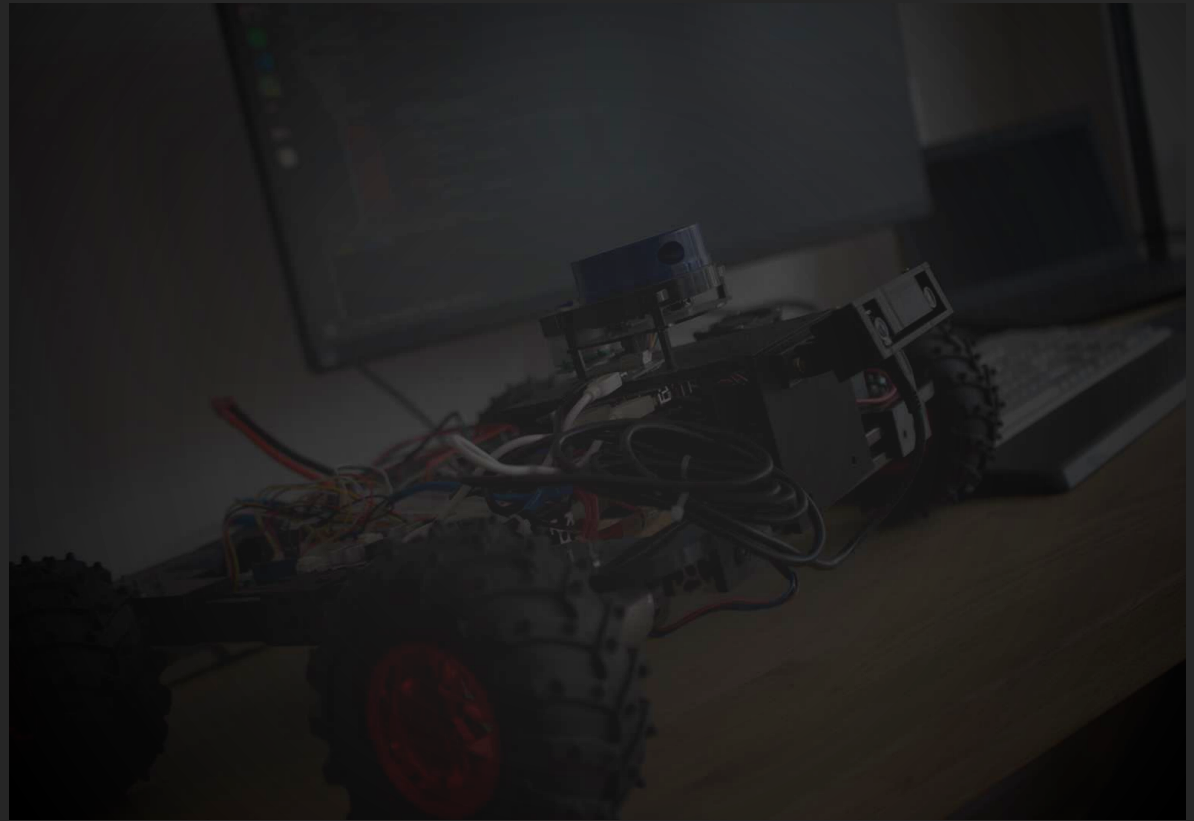
Agenda

- 1 Objective
- 2 Hardware build
- 3 Software Components
- 4 Outlook



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MateBot

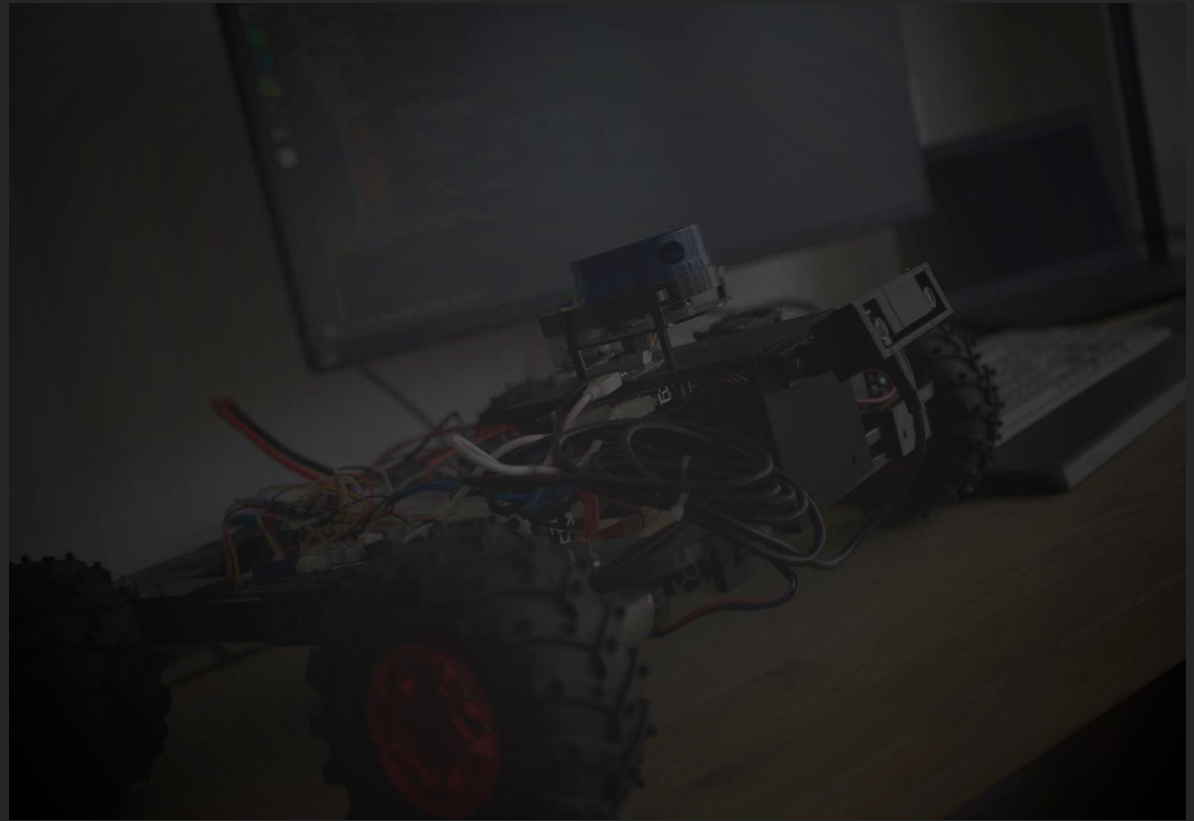


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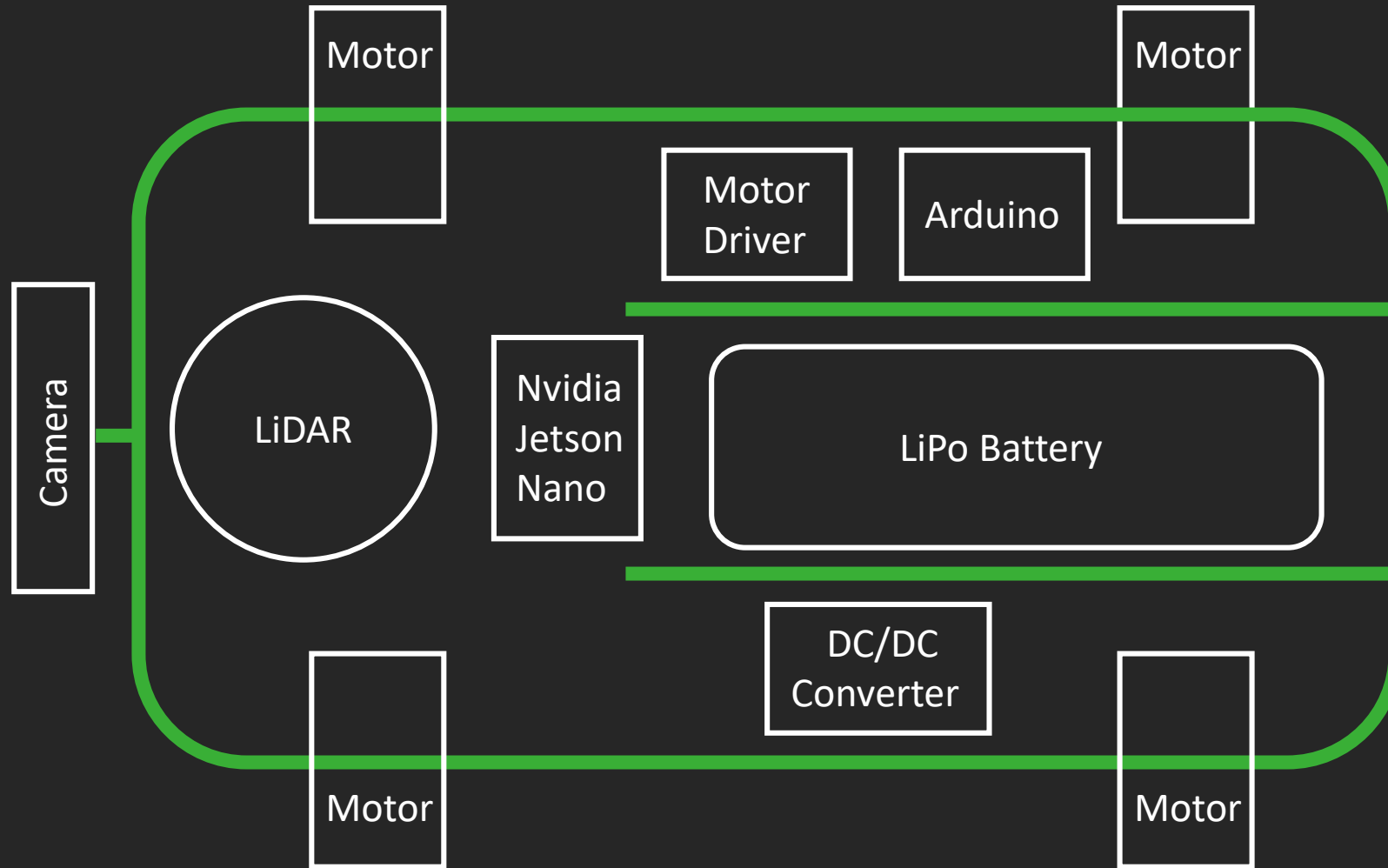


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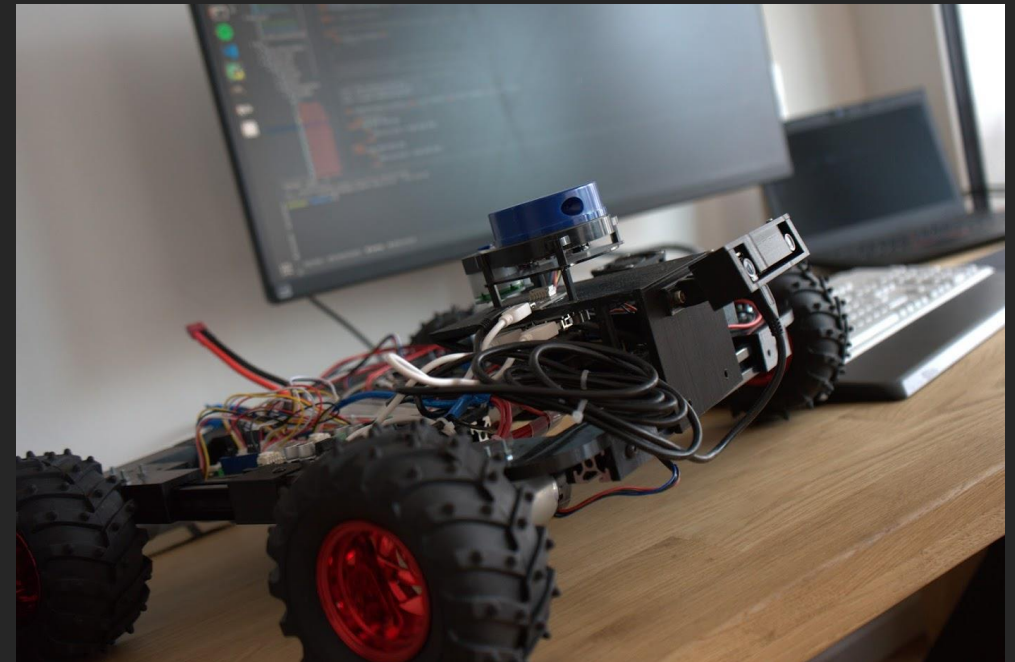
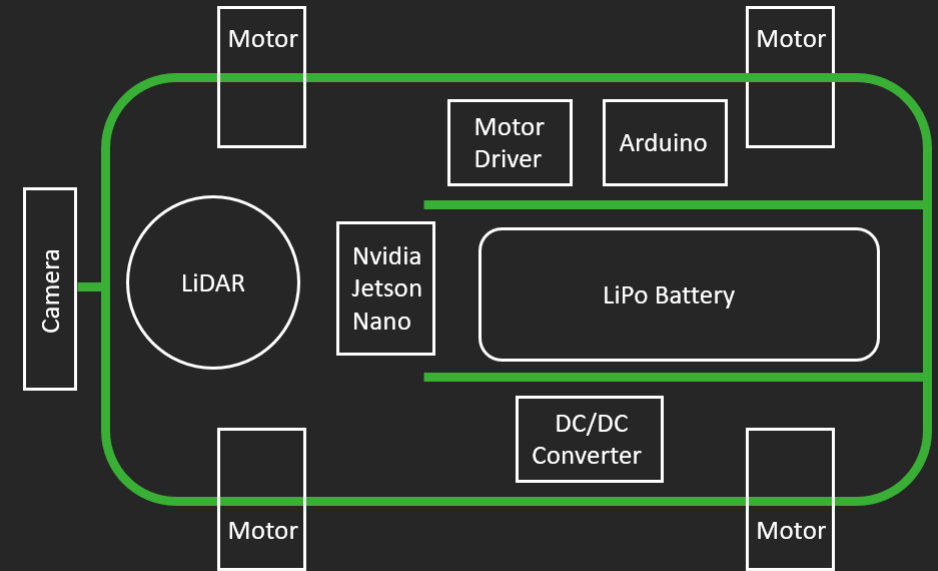
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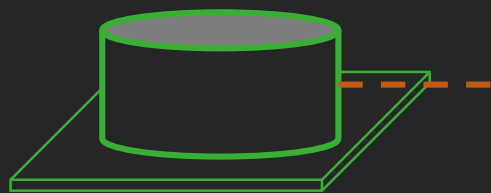
Hardware Components



Hardware Components



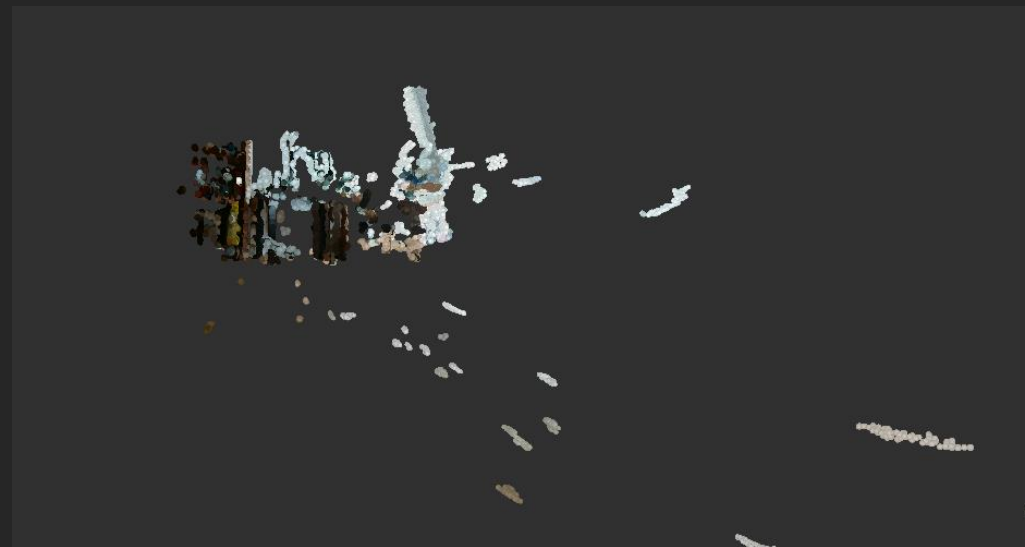
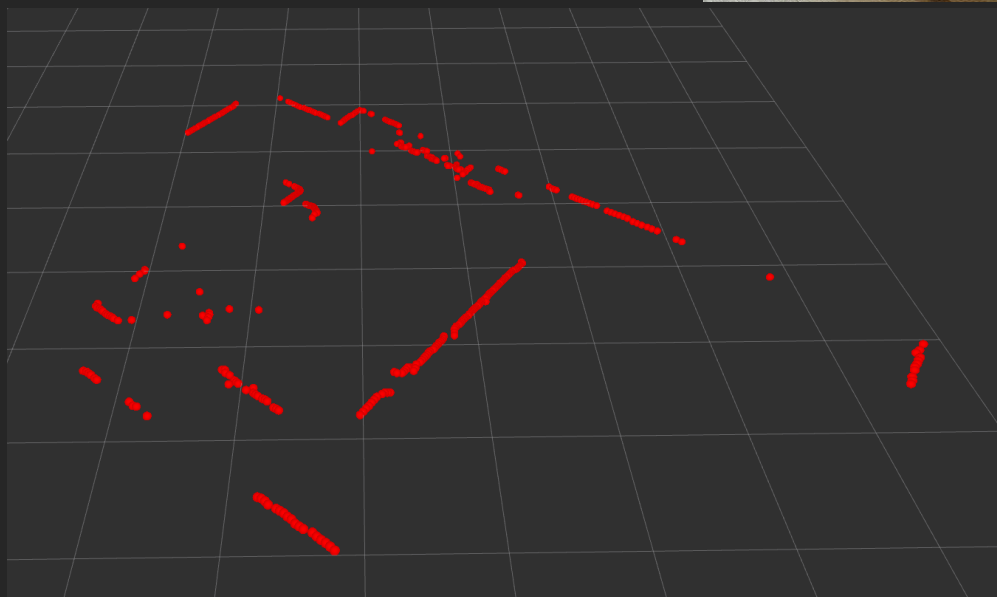
Sensor Systems



LiDAR

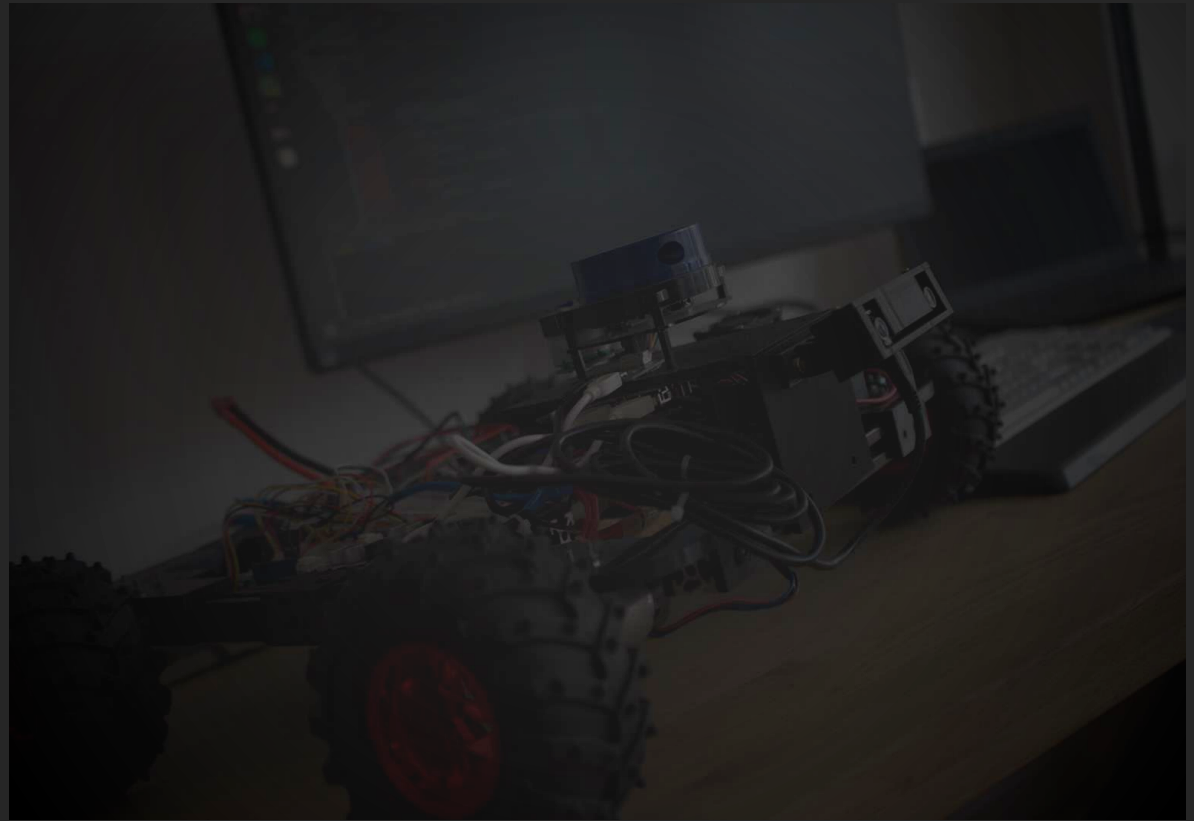


Stereo Camera

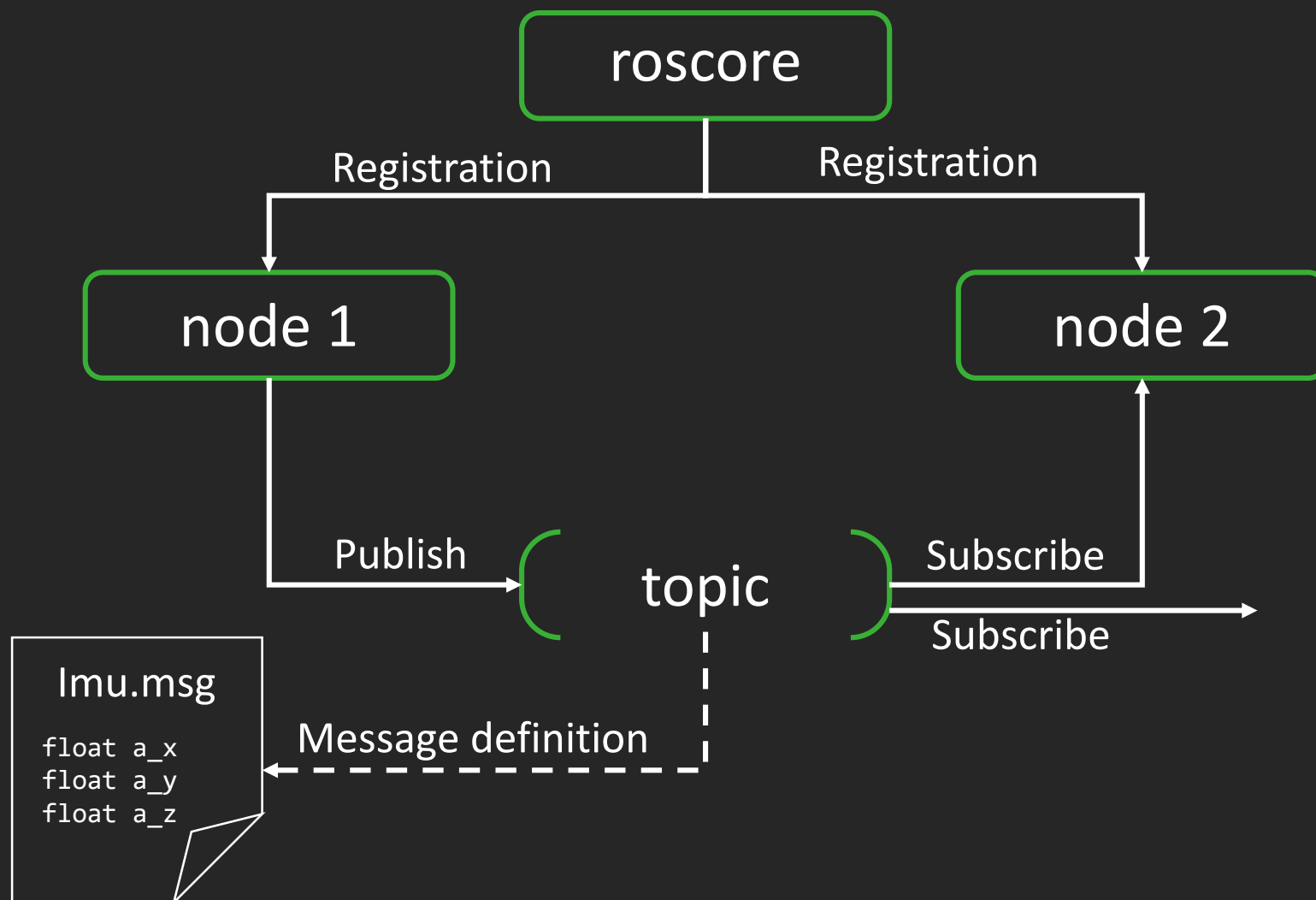


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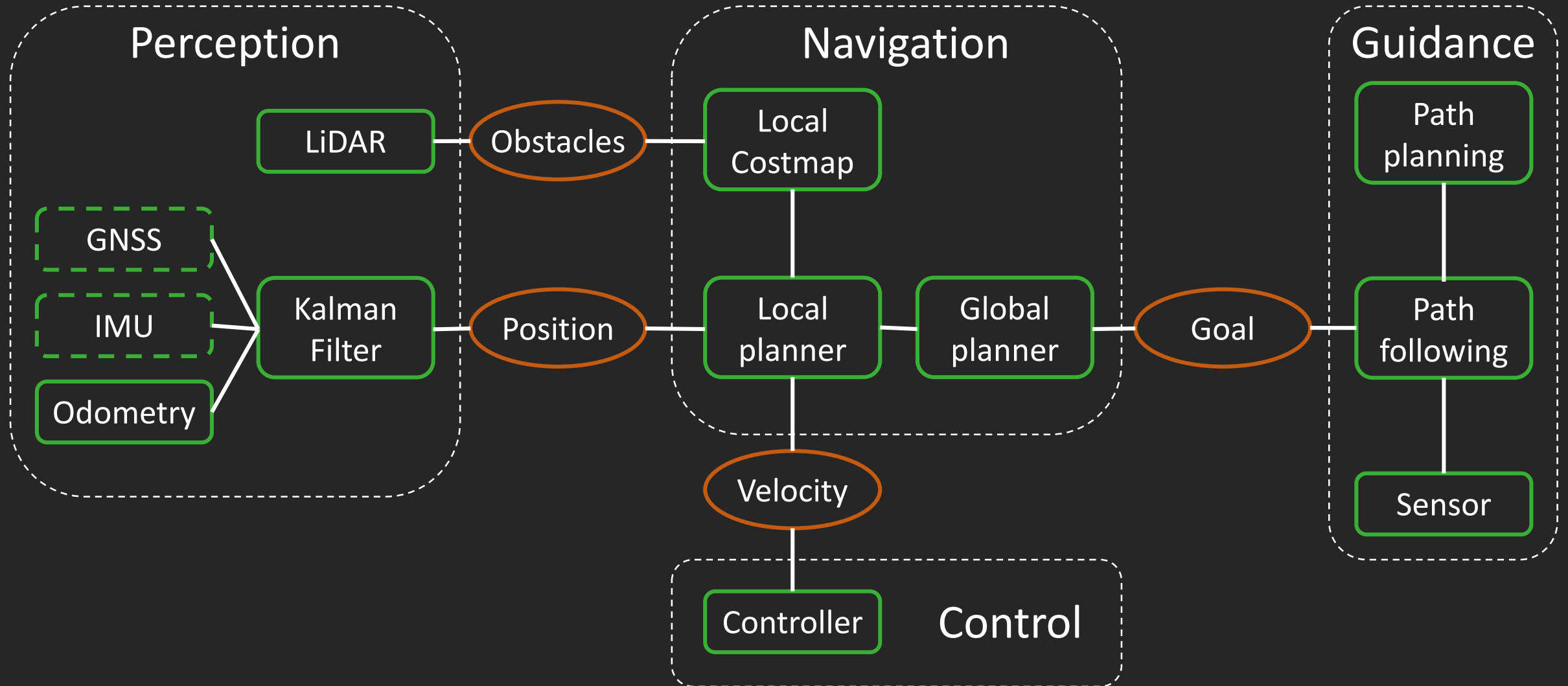
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ROS

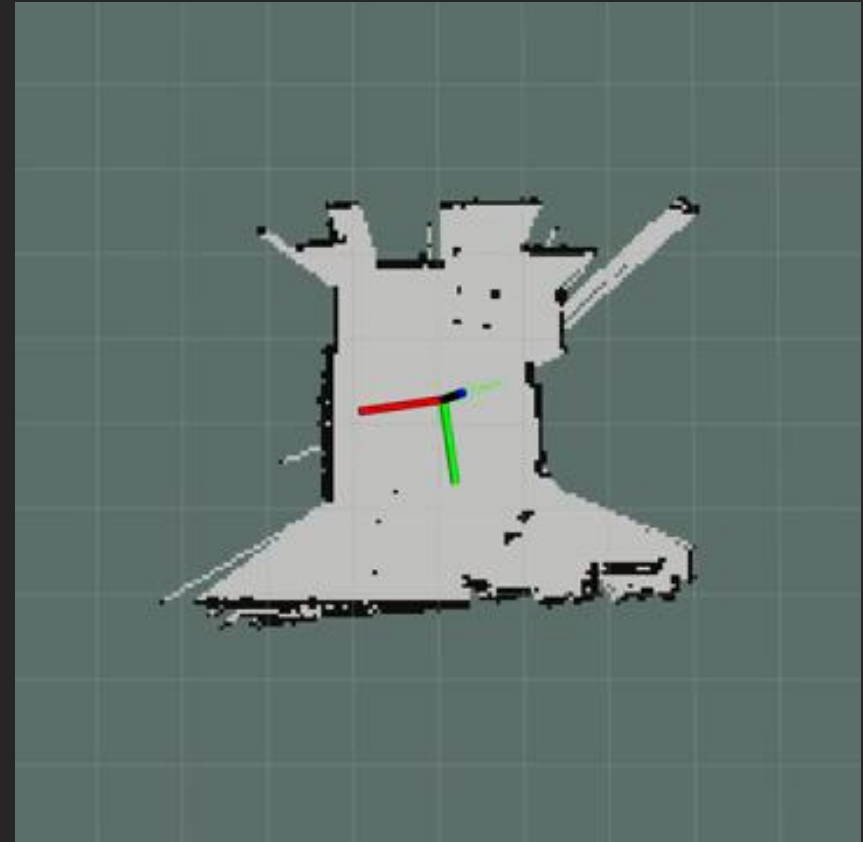
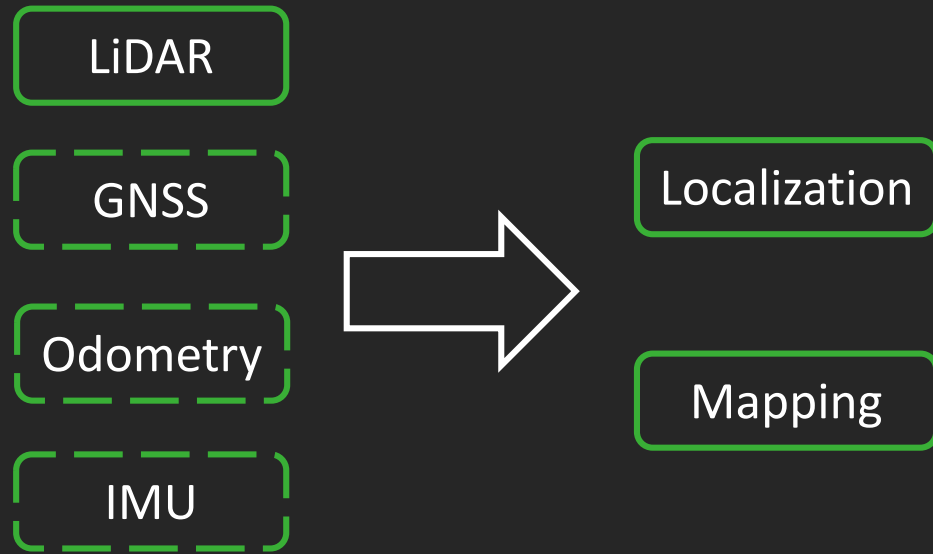


Robot Setup



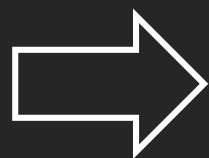
SLAM

Simultaneous Localization And Mapping

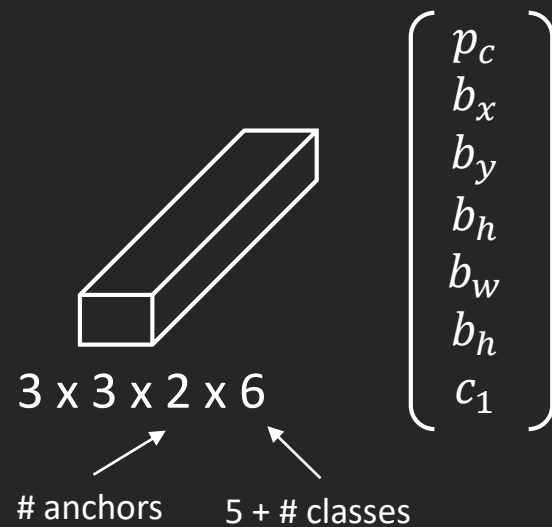
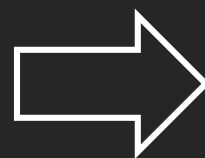


YOLO

You Only Look Once



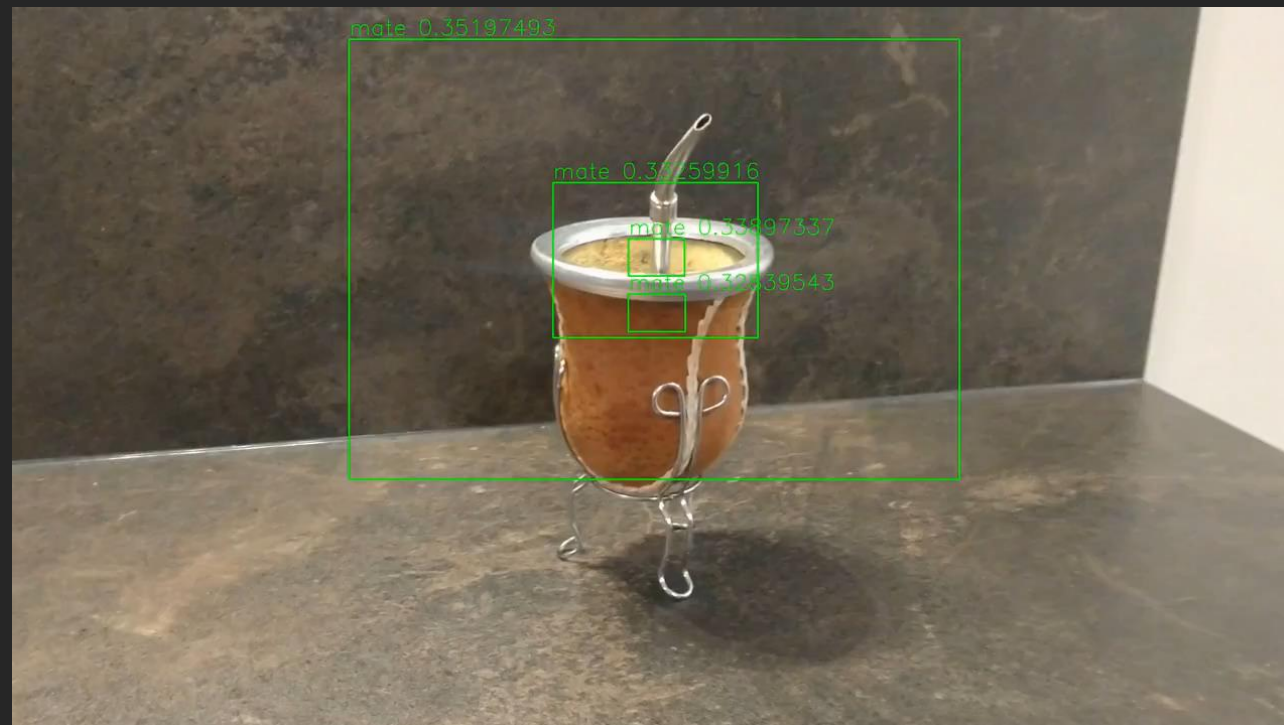
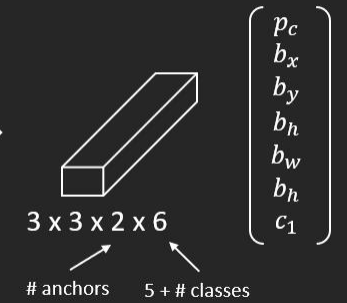
Convolutional
Neural
Network



YOLO You Only Look Once

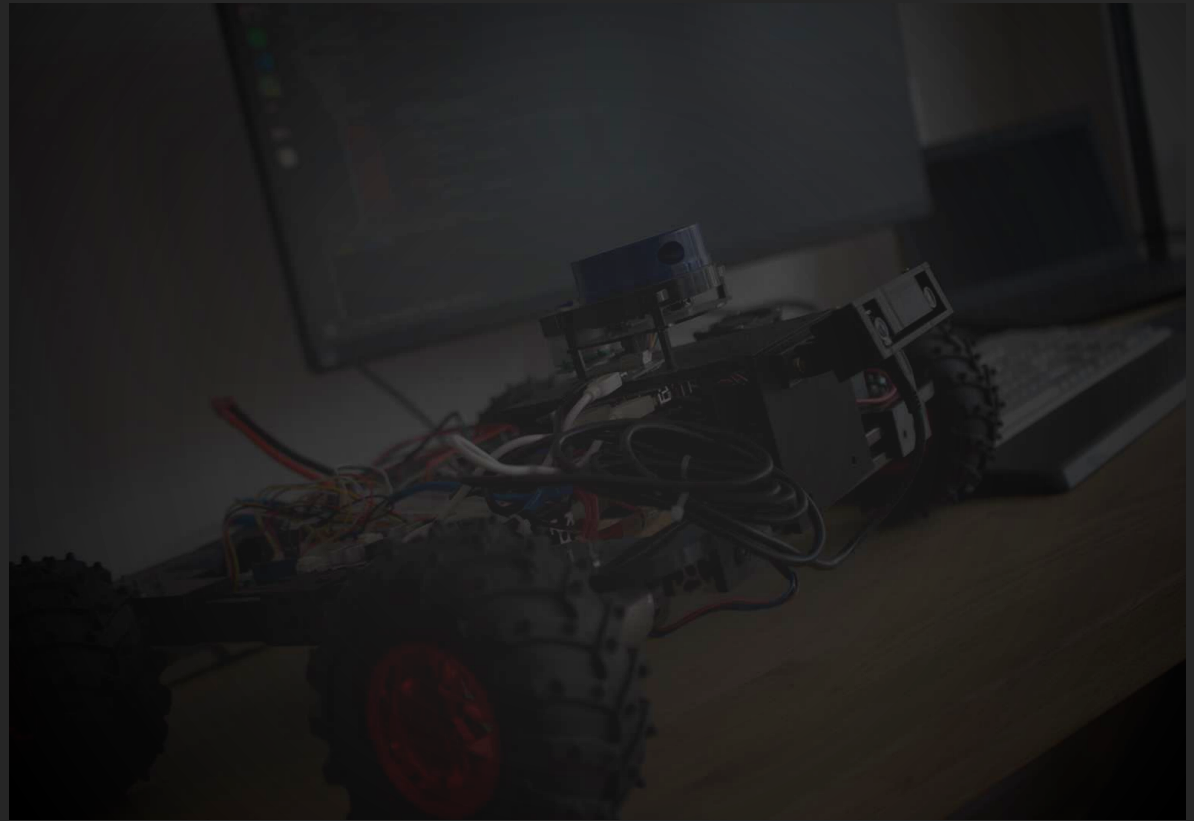


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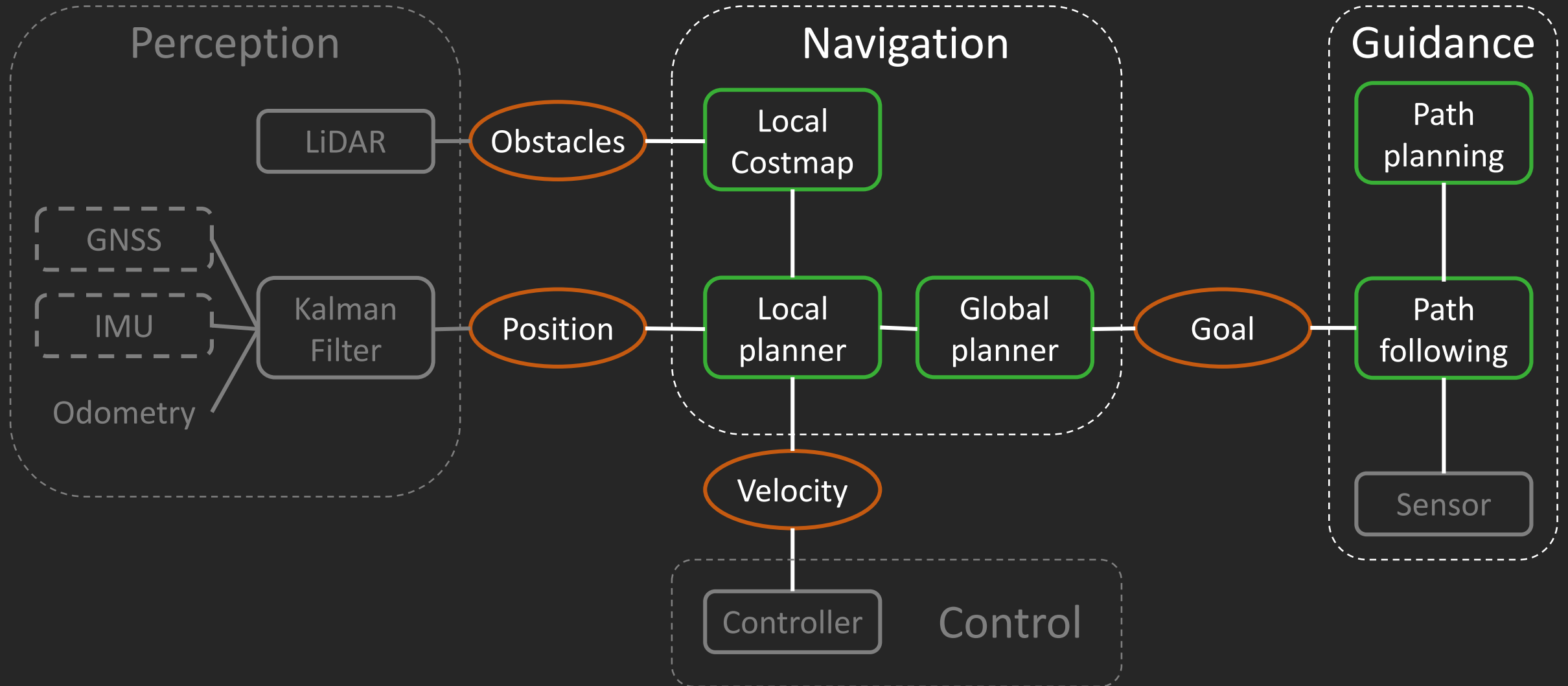


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Outlook



References

Joseph Redmon, Santosh Divvala, Ross Girshick, & Ali Farhadi. (2015). You Only Look Once: Unified, Real-Time Object Detection.

Quigley, M., Gerkey, B., & Smart, W. (2015). *Programming Robots with ROS*. O'Reilly Media.

Géron, A. (2017). *Hands-on machine learning with Scikit-Learn and TensorFlow : concepts, tools, and techniques to build intelligent systems*. O'Reilly Media.

Contact



<https://github.com/code-byter>