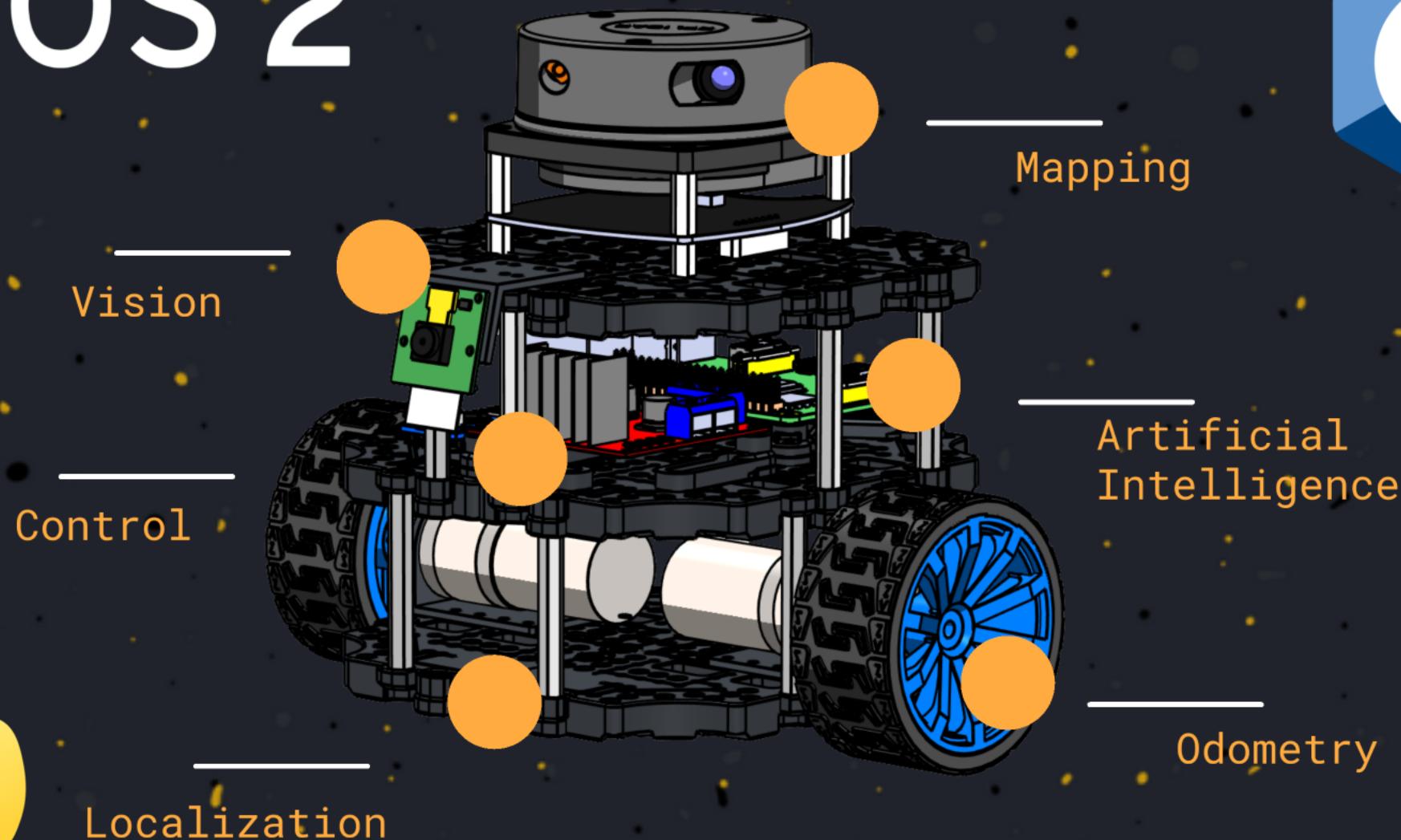


# ROS 2



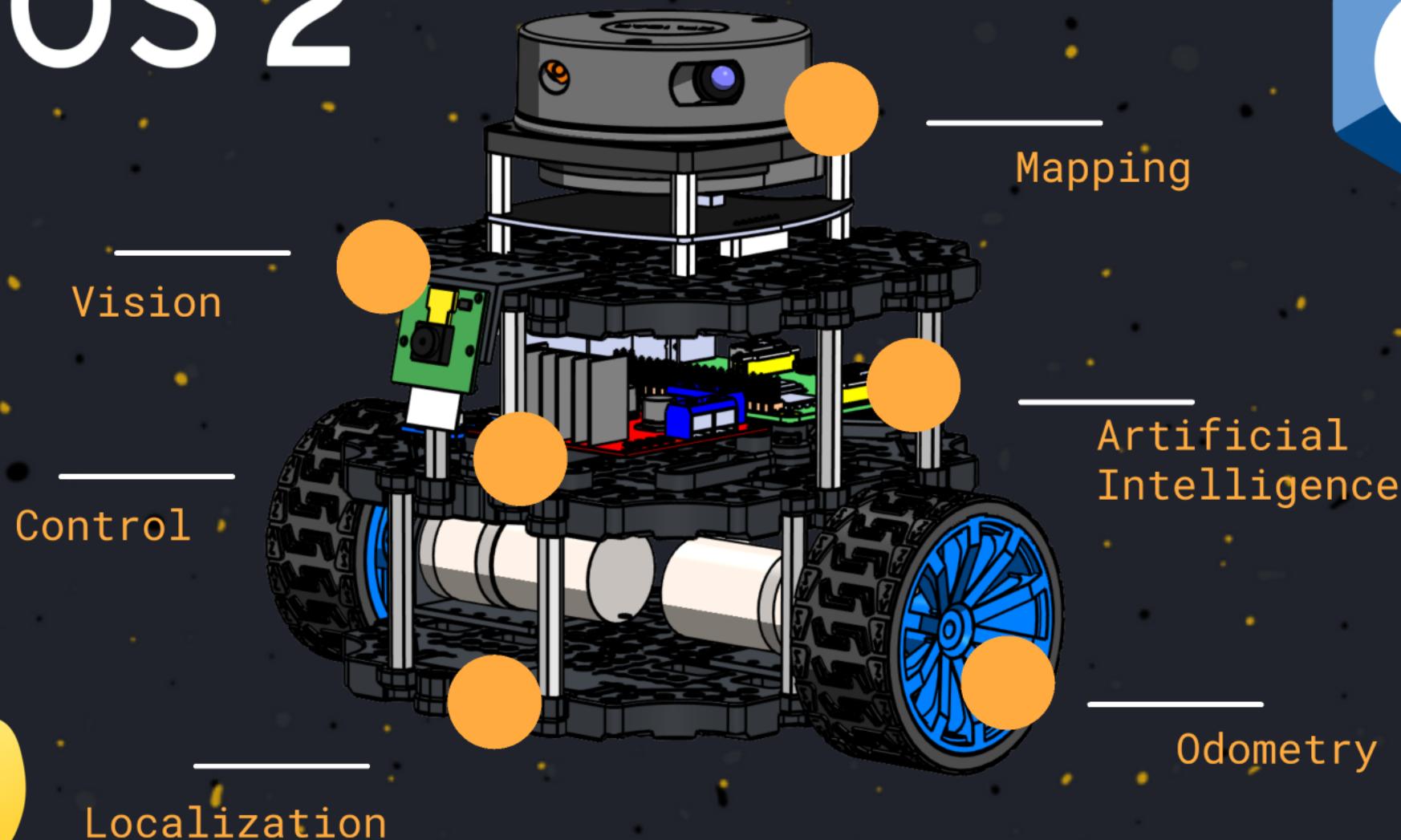
“

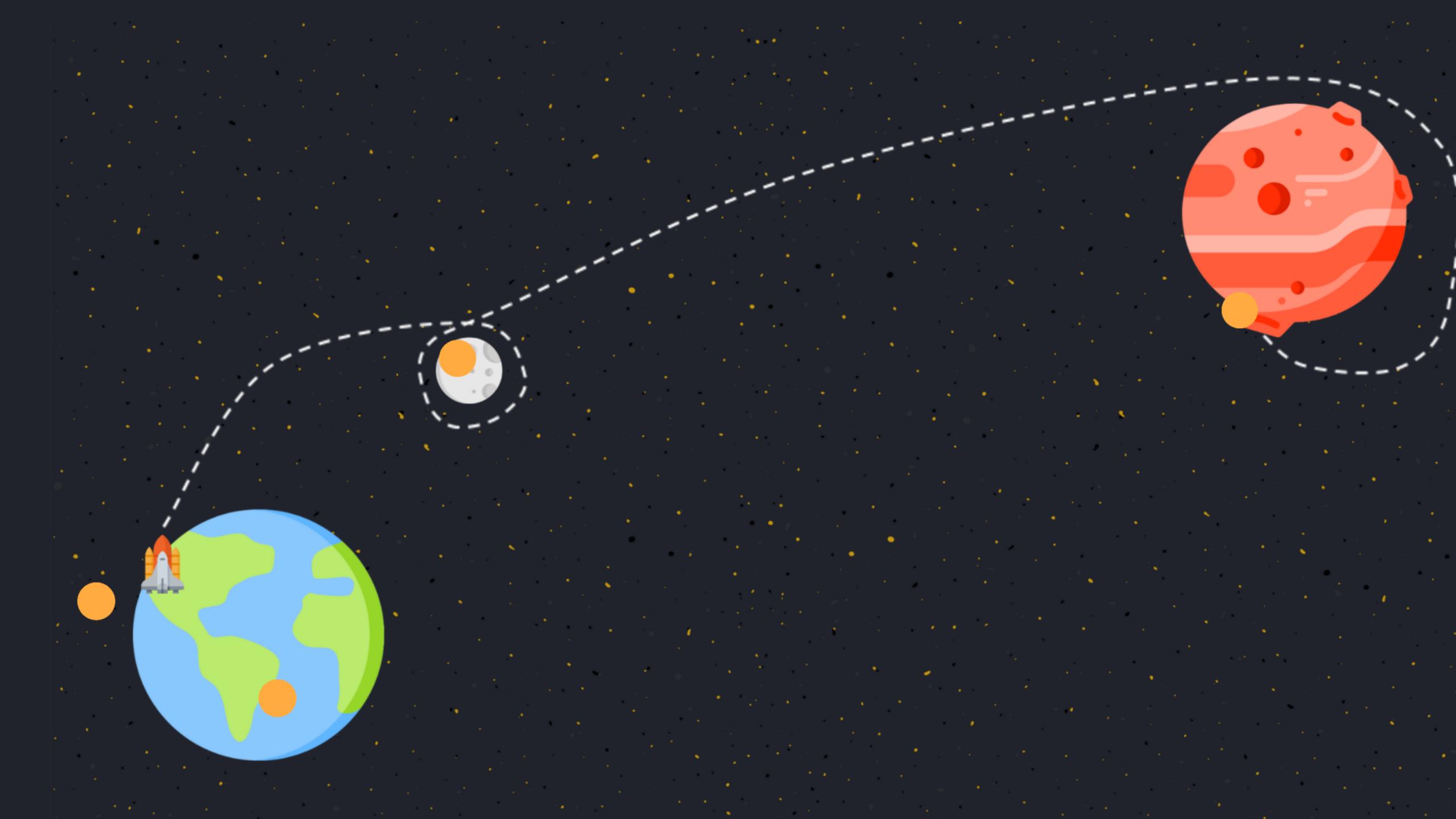
Learning is an active process; we learn by doing! Only knowledge that is used sticks in your mind

Dale Carnegie

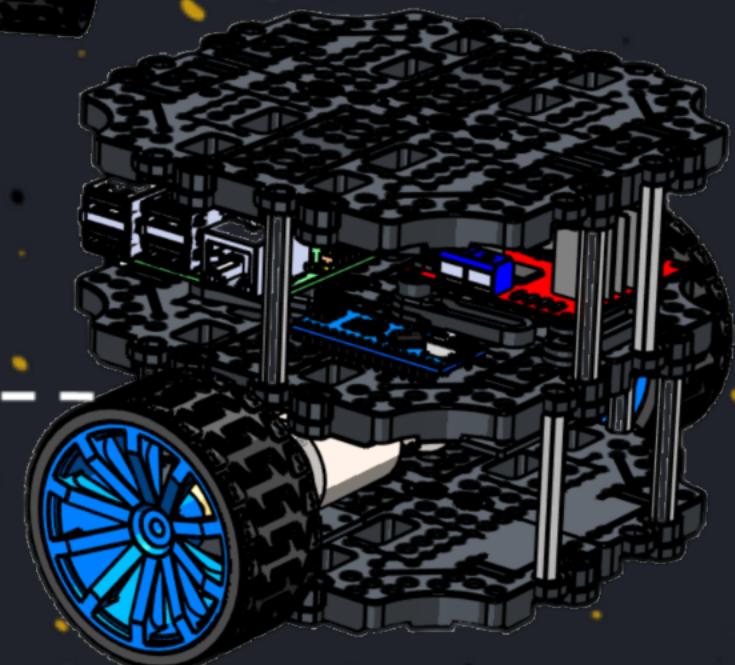
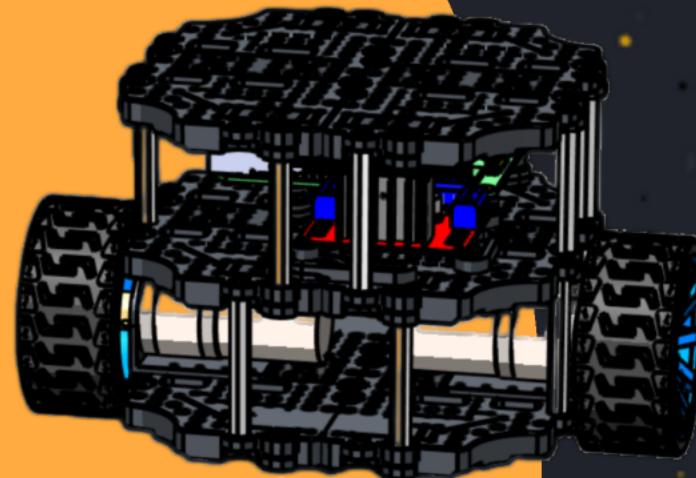


# ROS 2



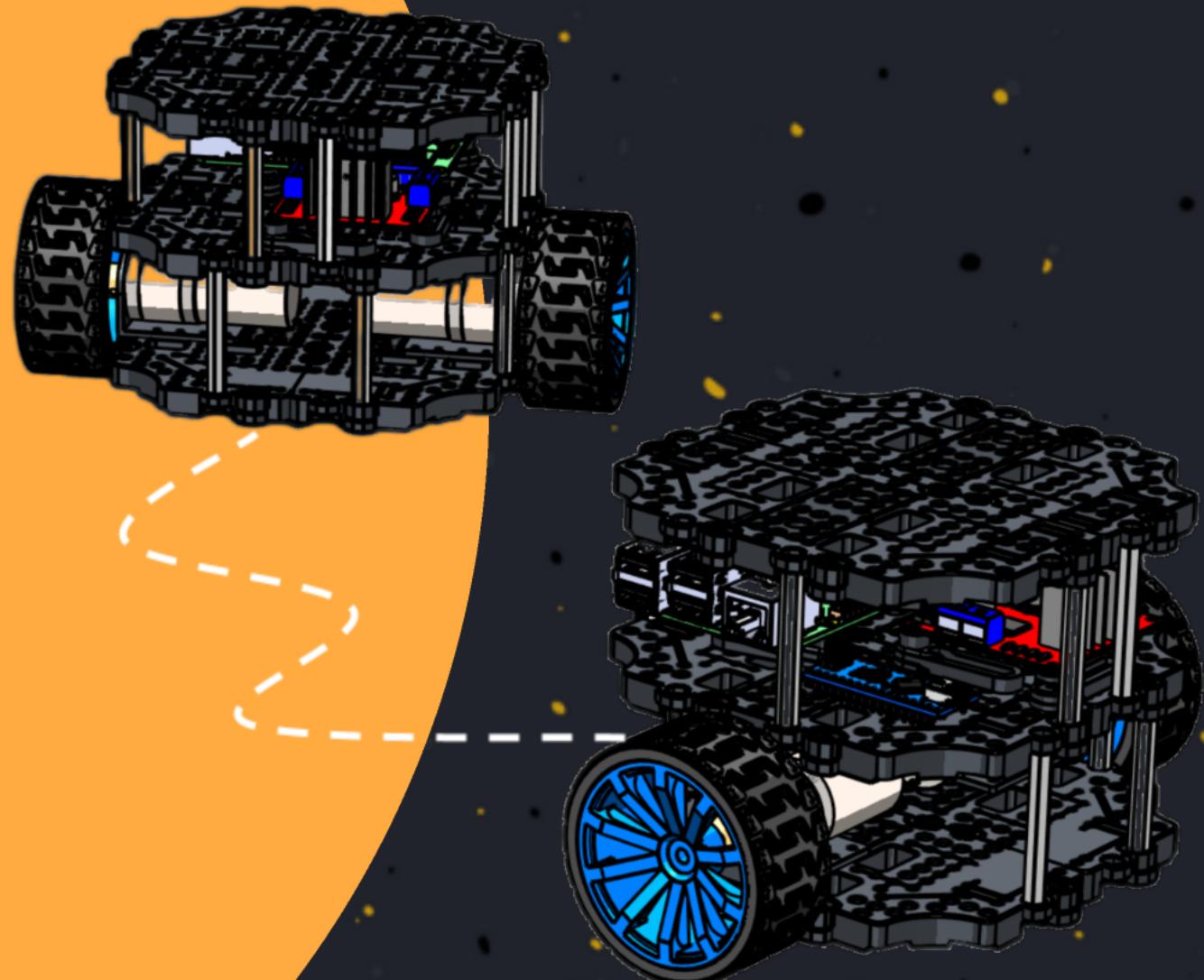


# Odometry and Control



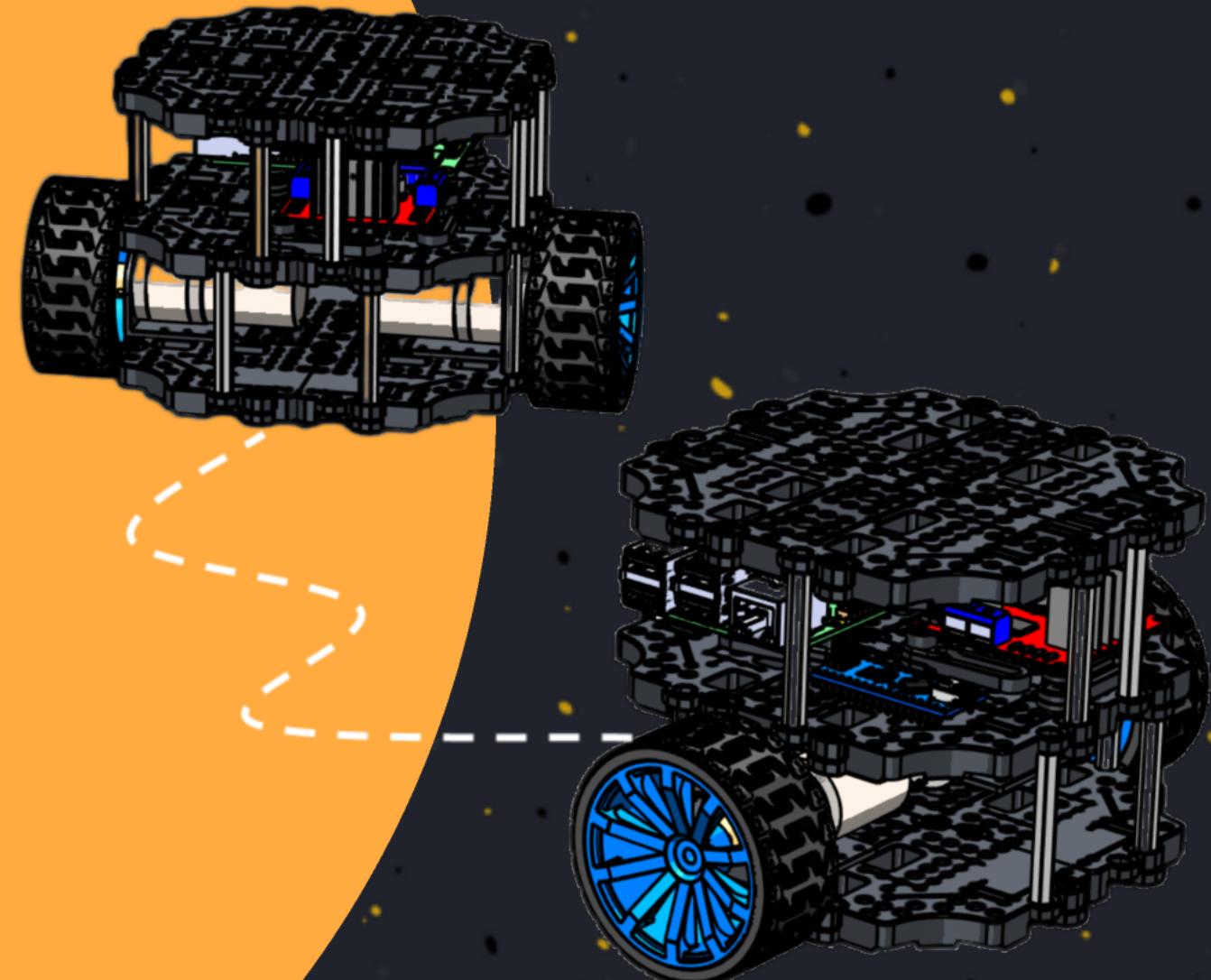
# Odometry and Control

- Differential Kinematics



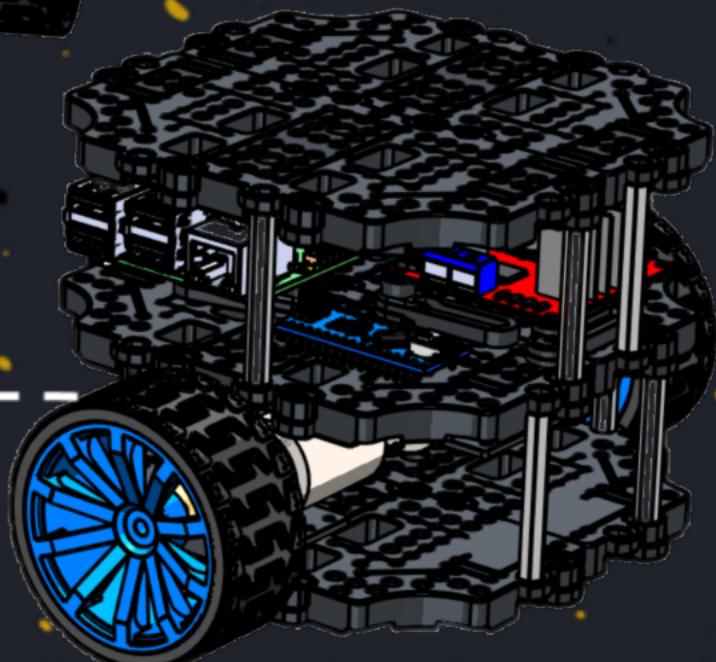
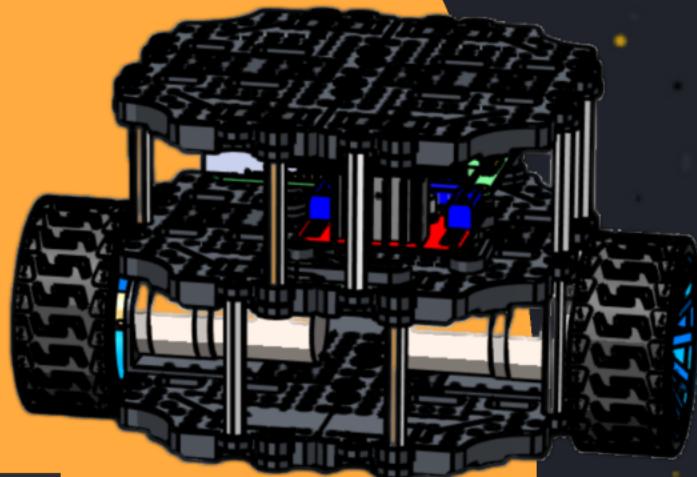
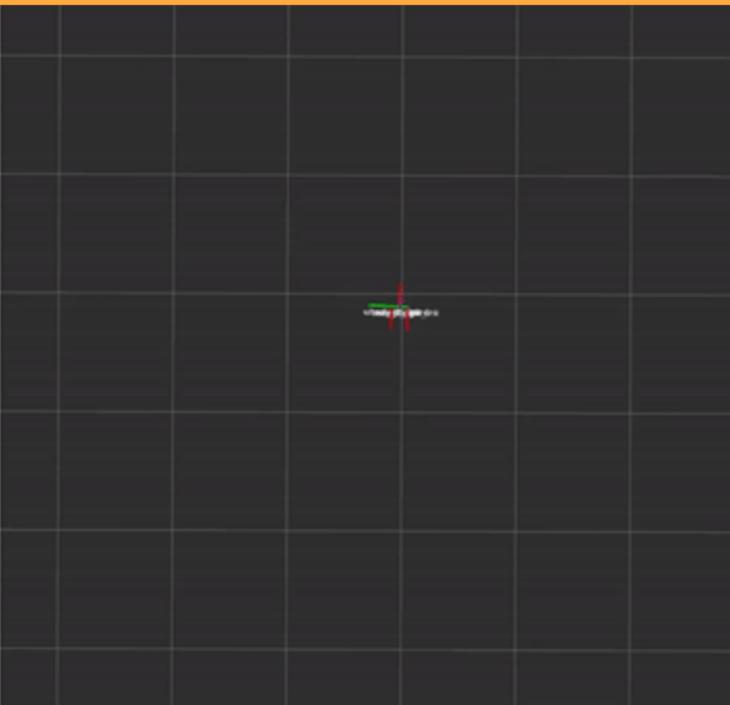
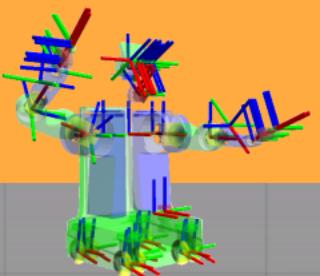
# Odometry and Control

- Differential Kinematics



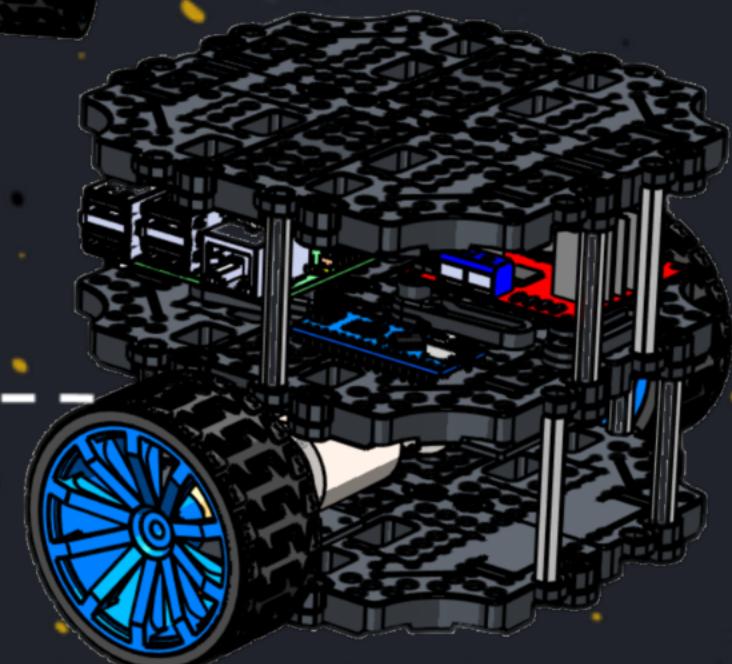
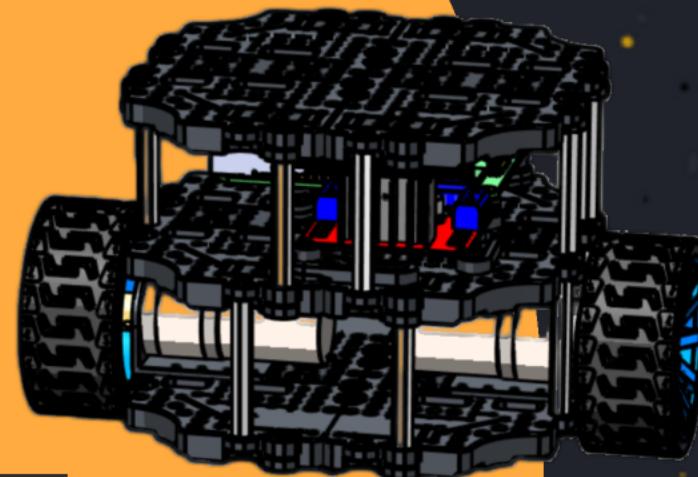
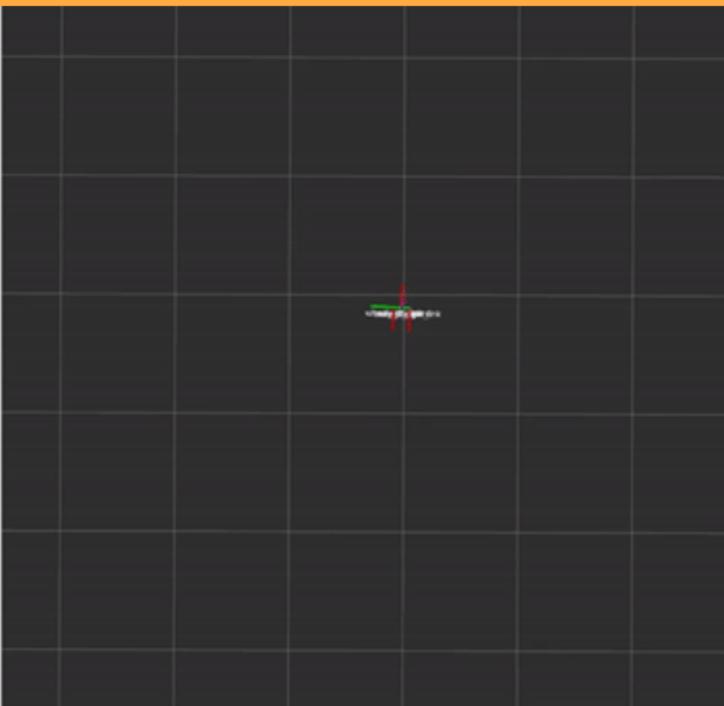
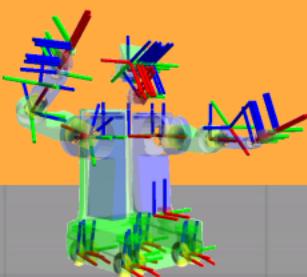
# Odometry and Control

- Differential Kinematics



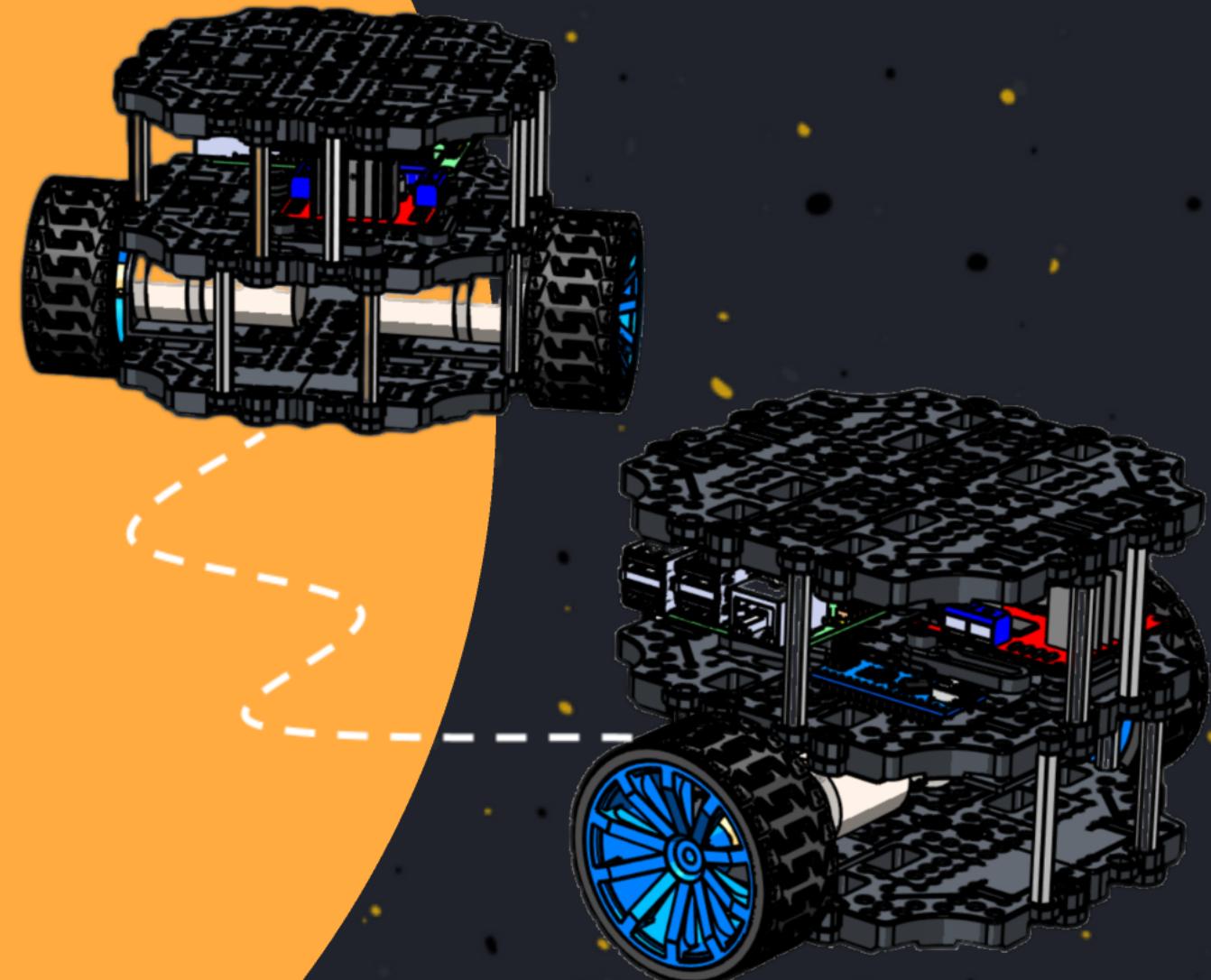
# Odometry and Control

- Differential Kinematics
- Odometry



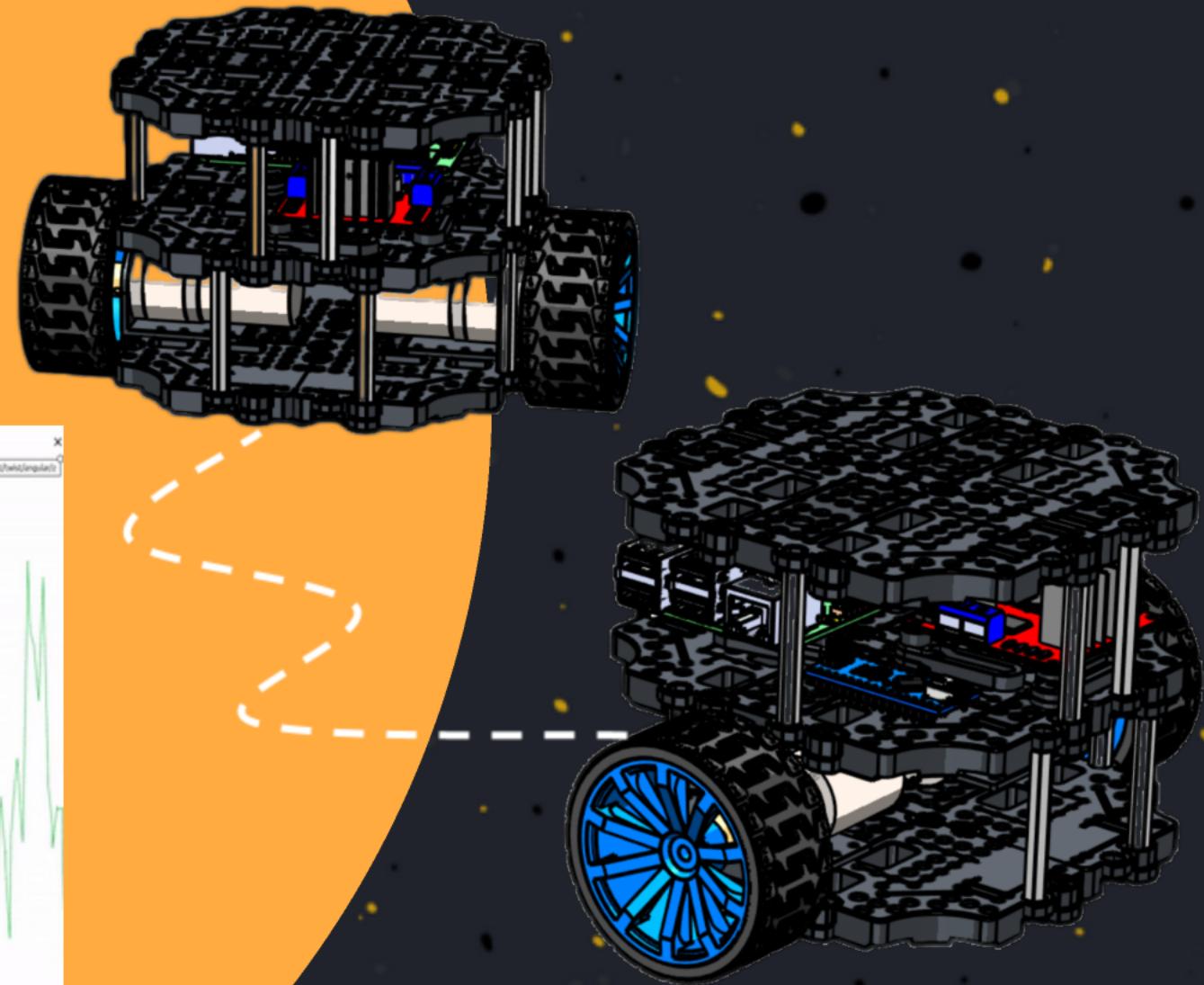
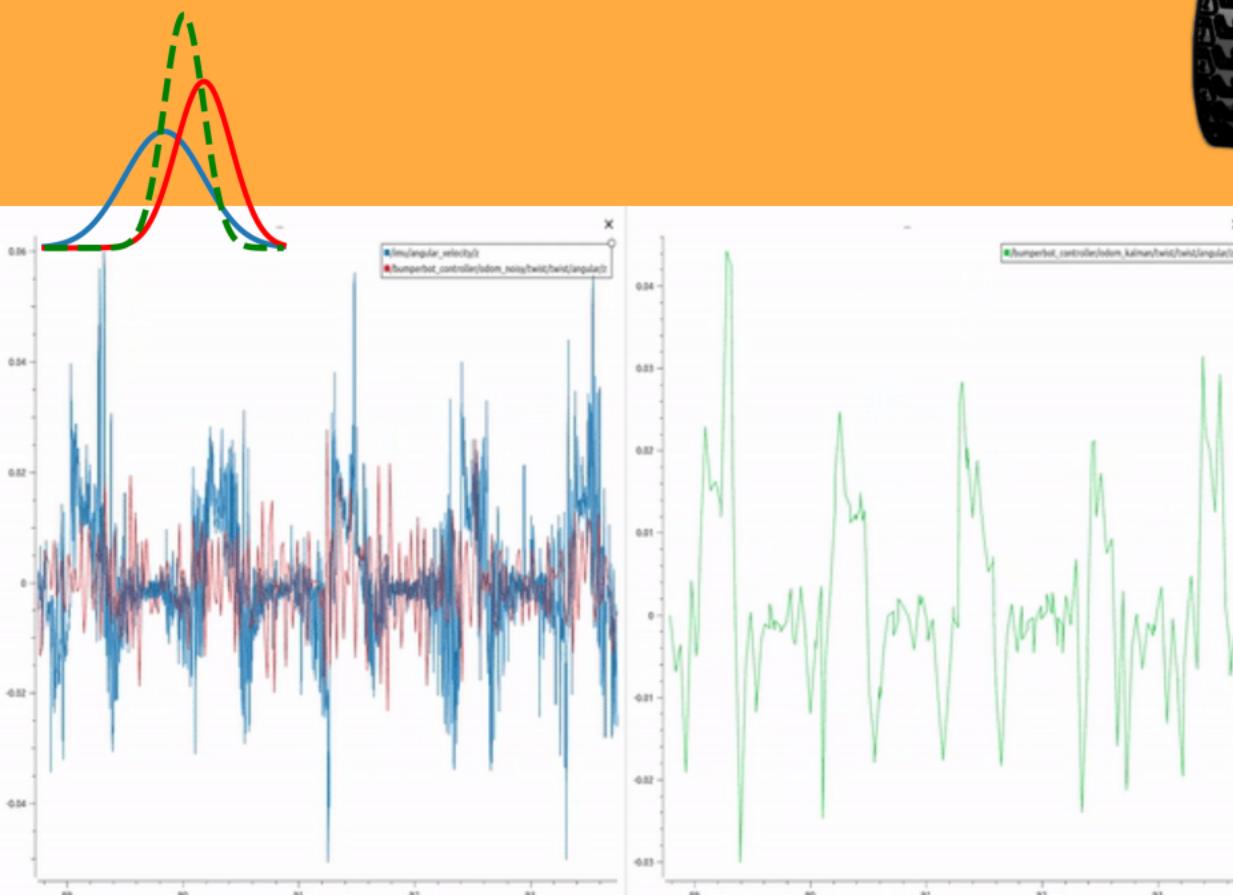
# Odometry and Control

- Differential Kinematics
- Odometry



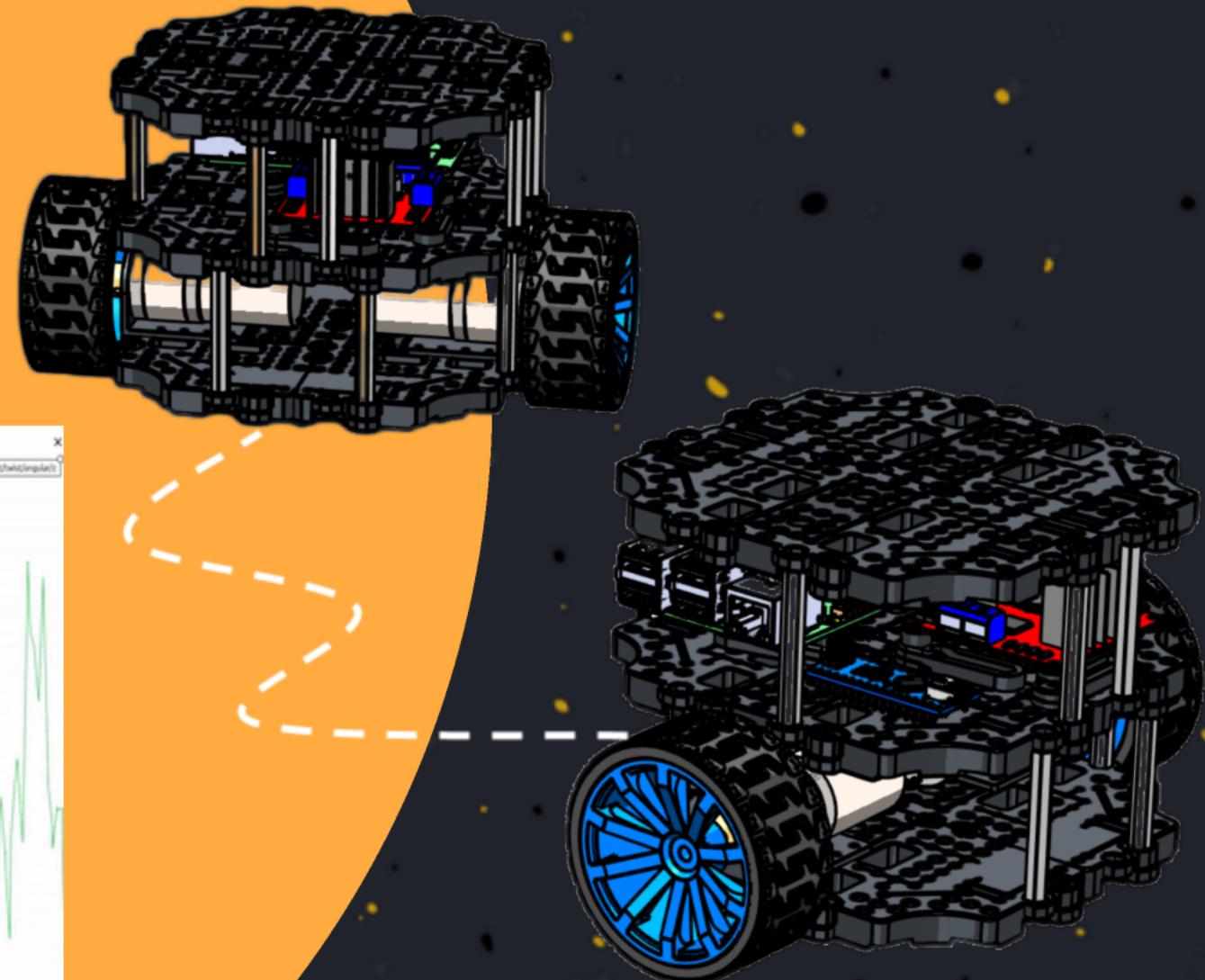
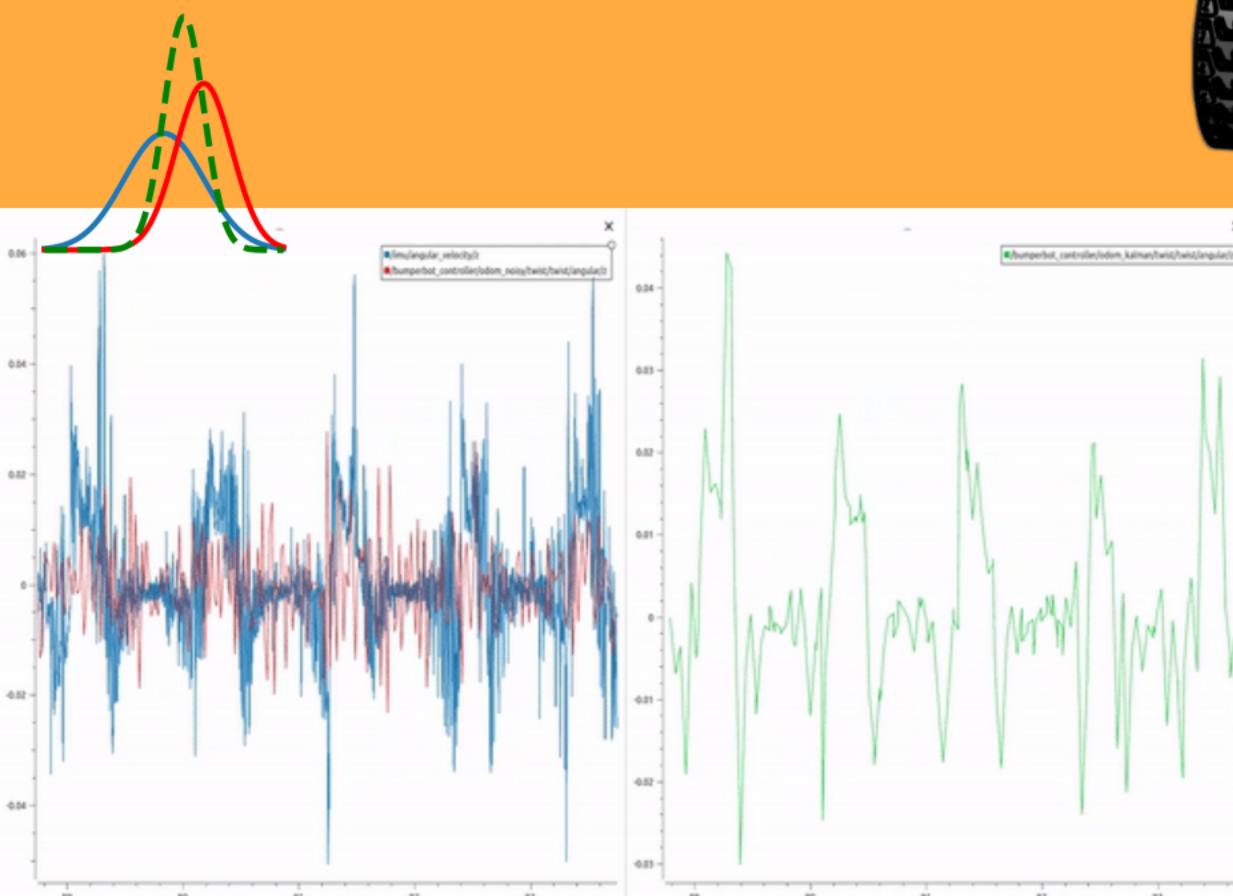
# Odometry and Control

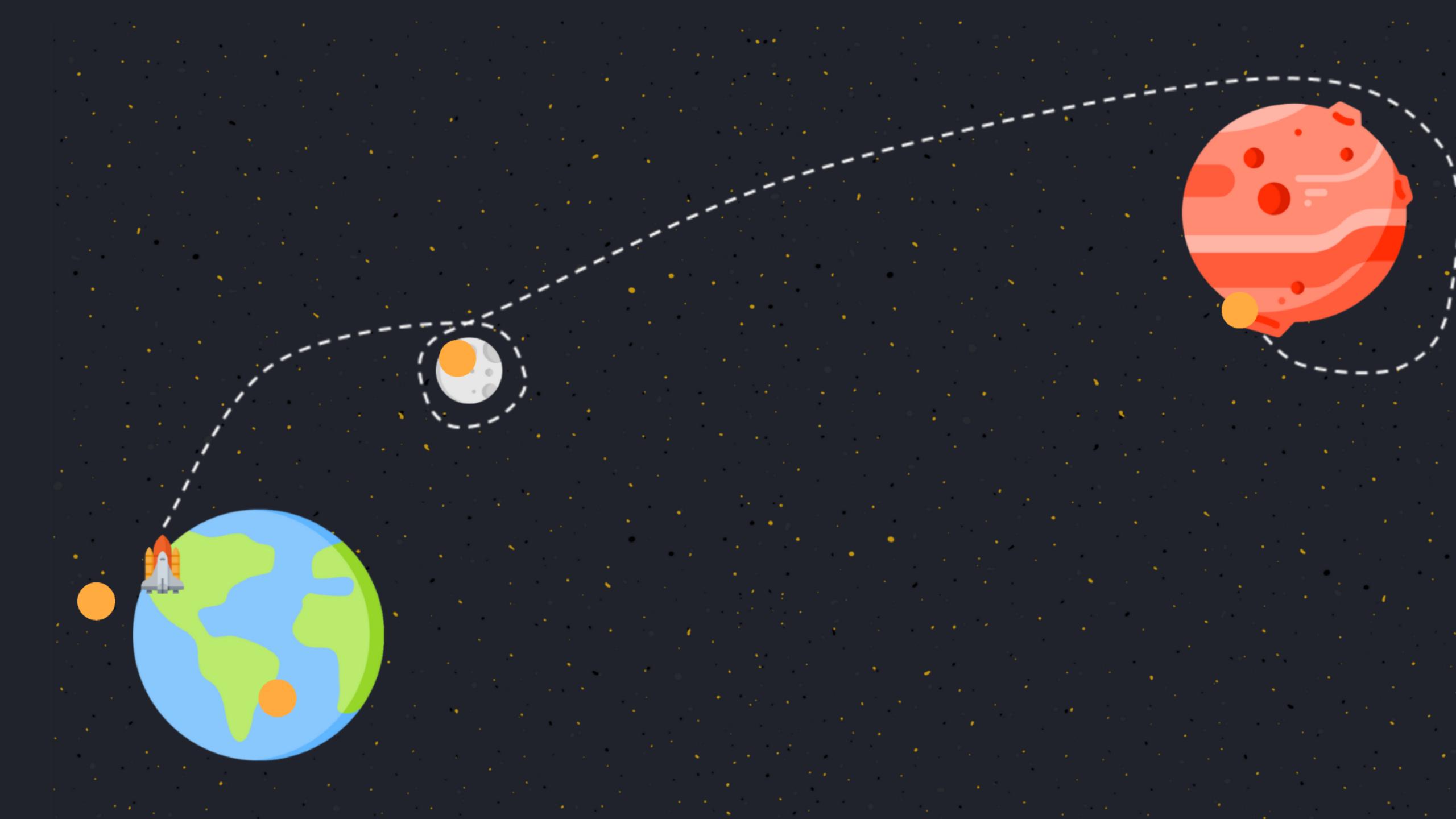
- Differential Kinematics
- Odometry

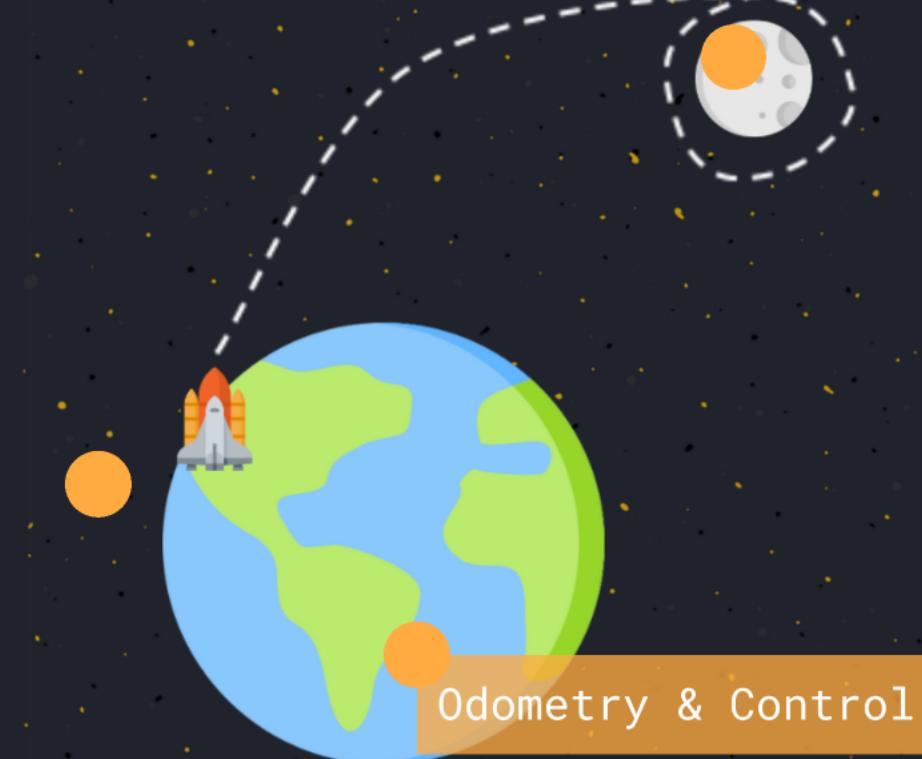


# Odometry and Control

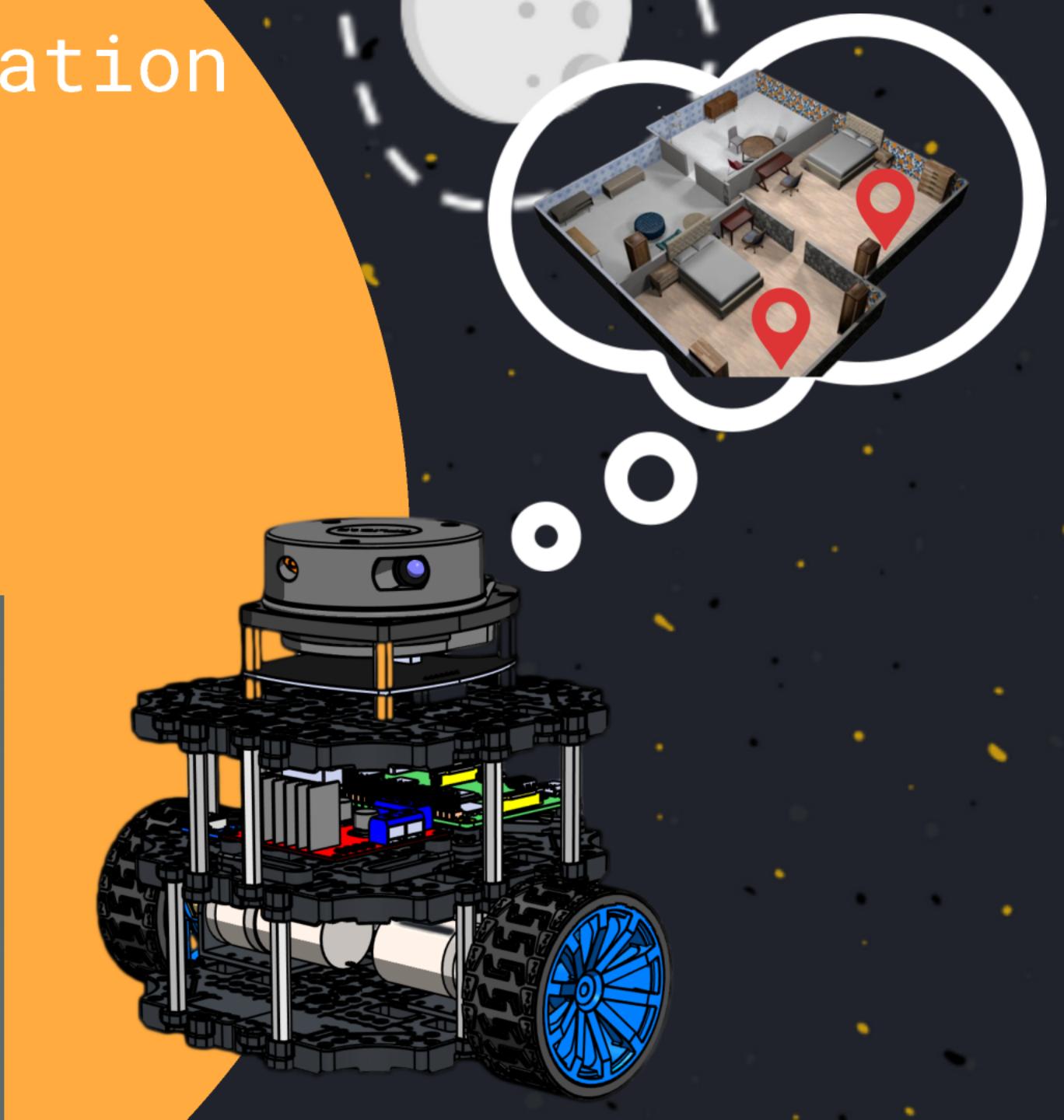
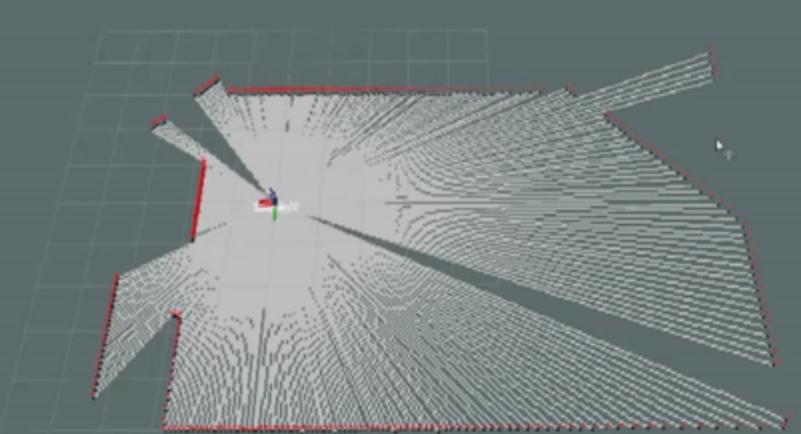
- Differential Kinematics
- Odometry
- Sensor Fusion





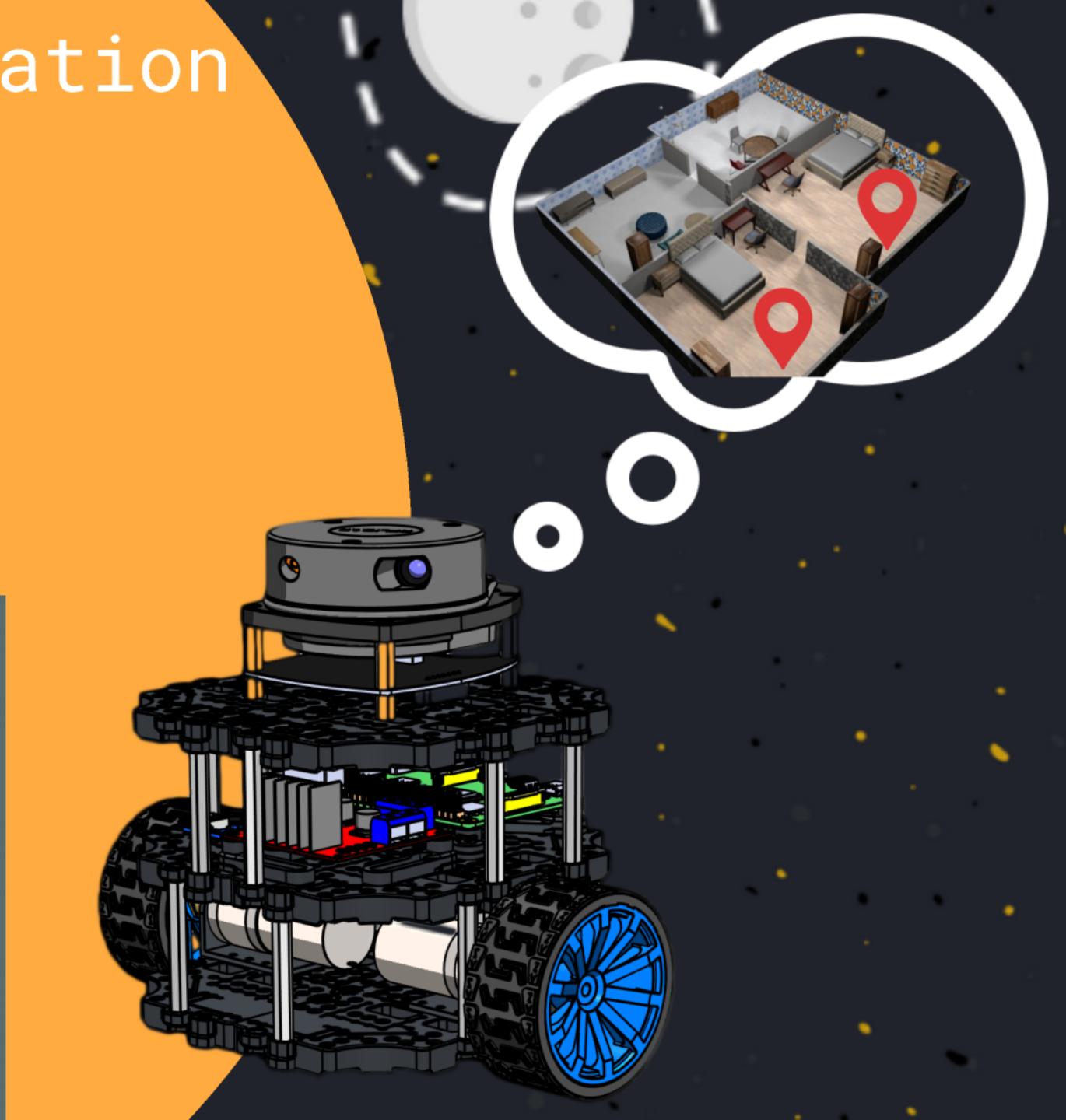
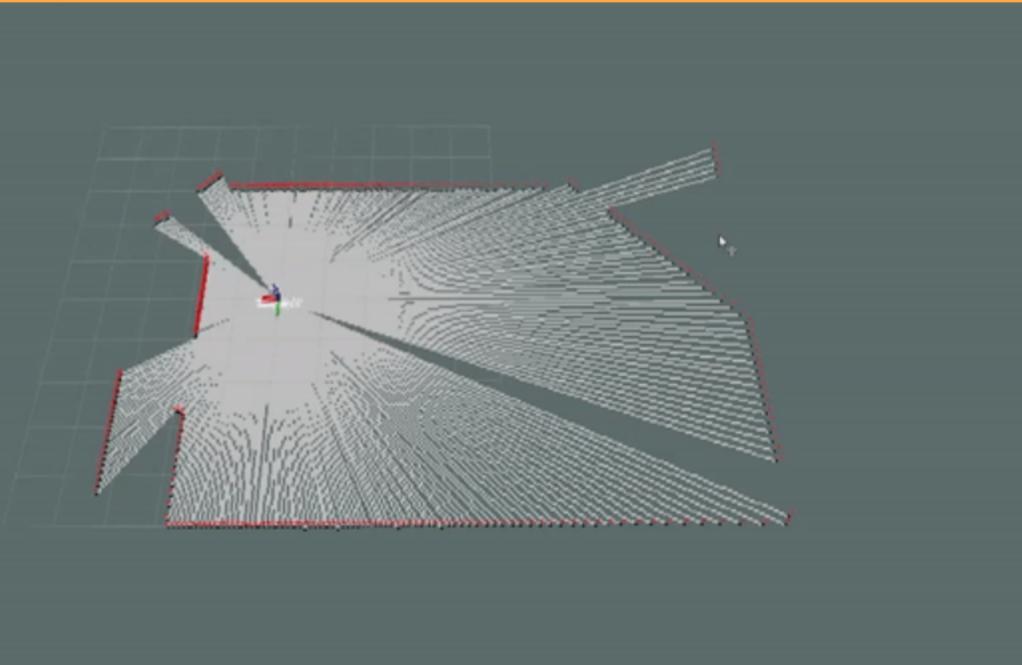


# Mapping and Localization



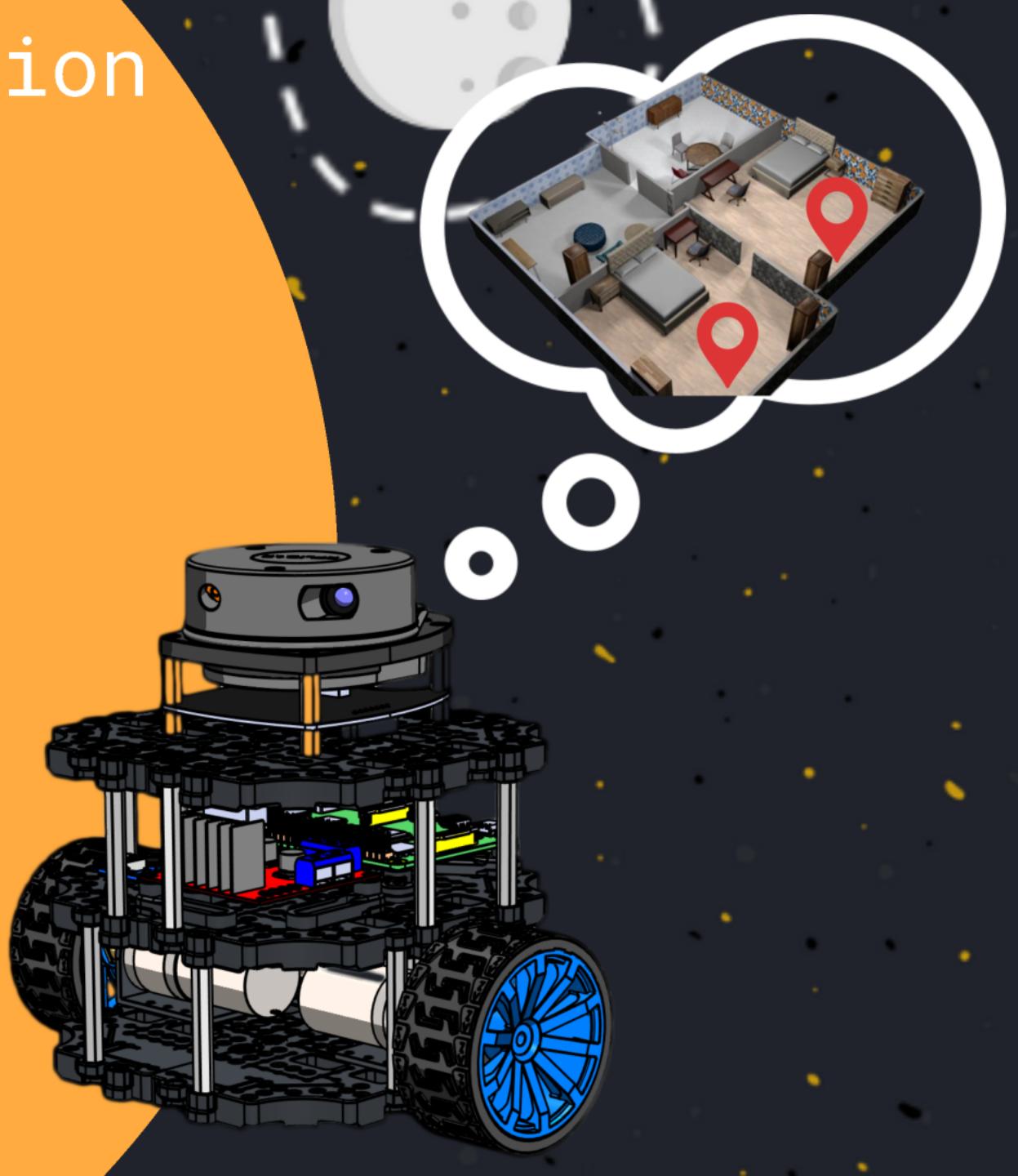
# Mapping and Localization

- Mapping



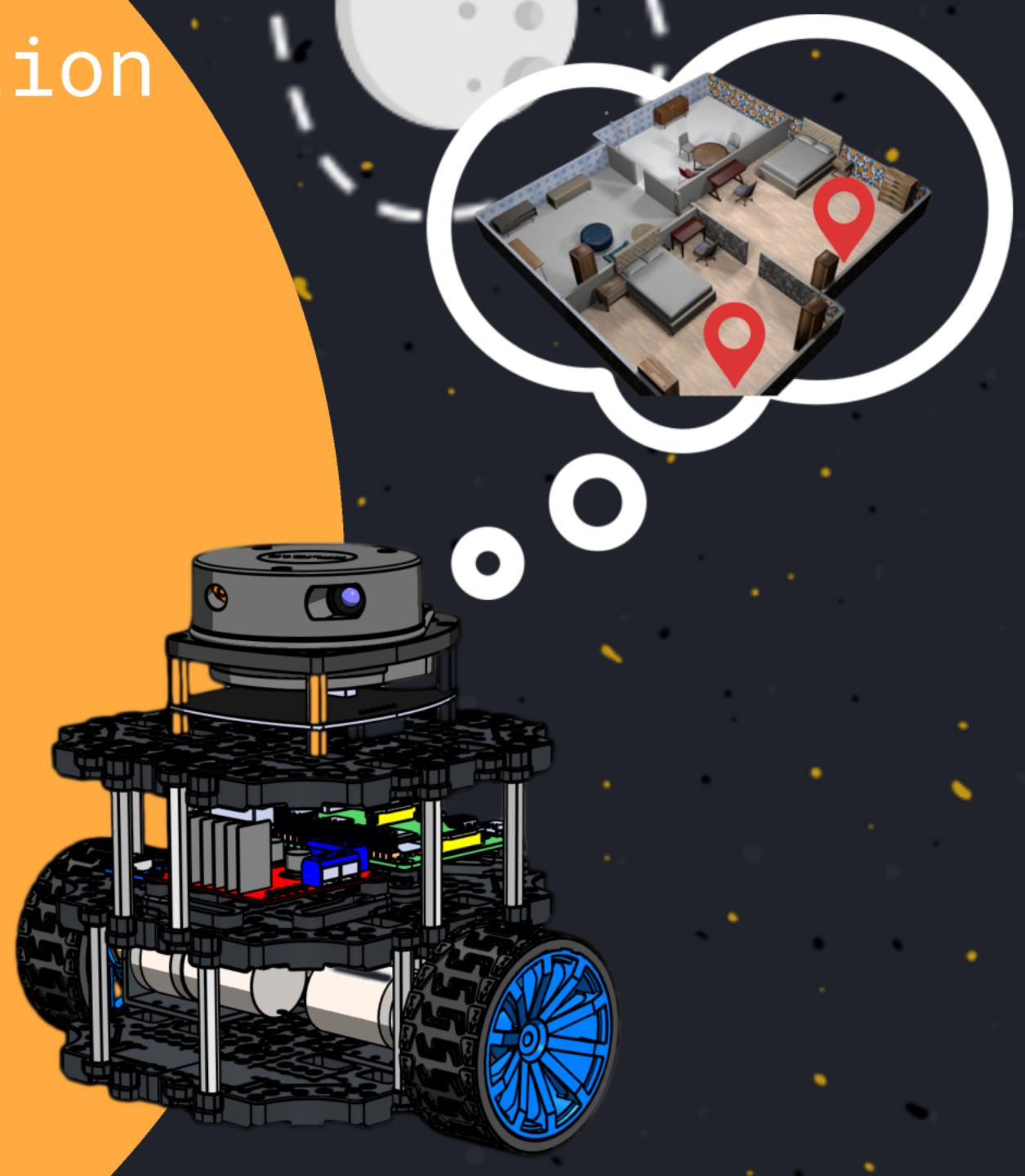
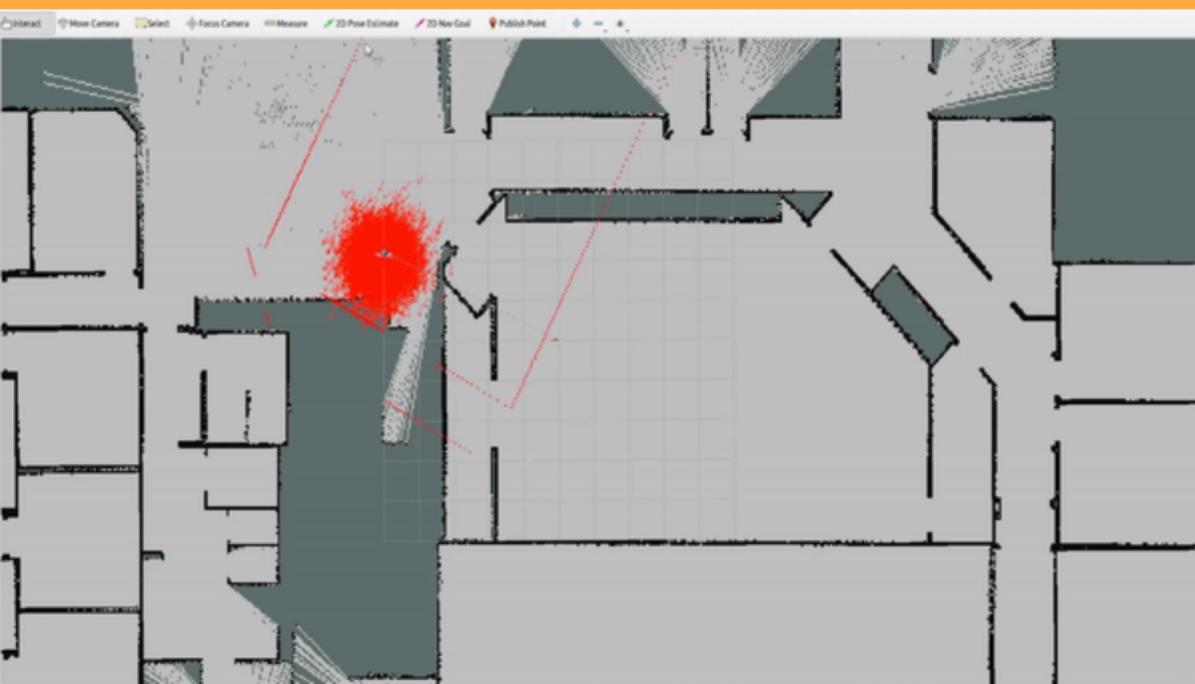
# Mapping and Localization

- Mapping



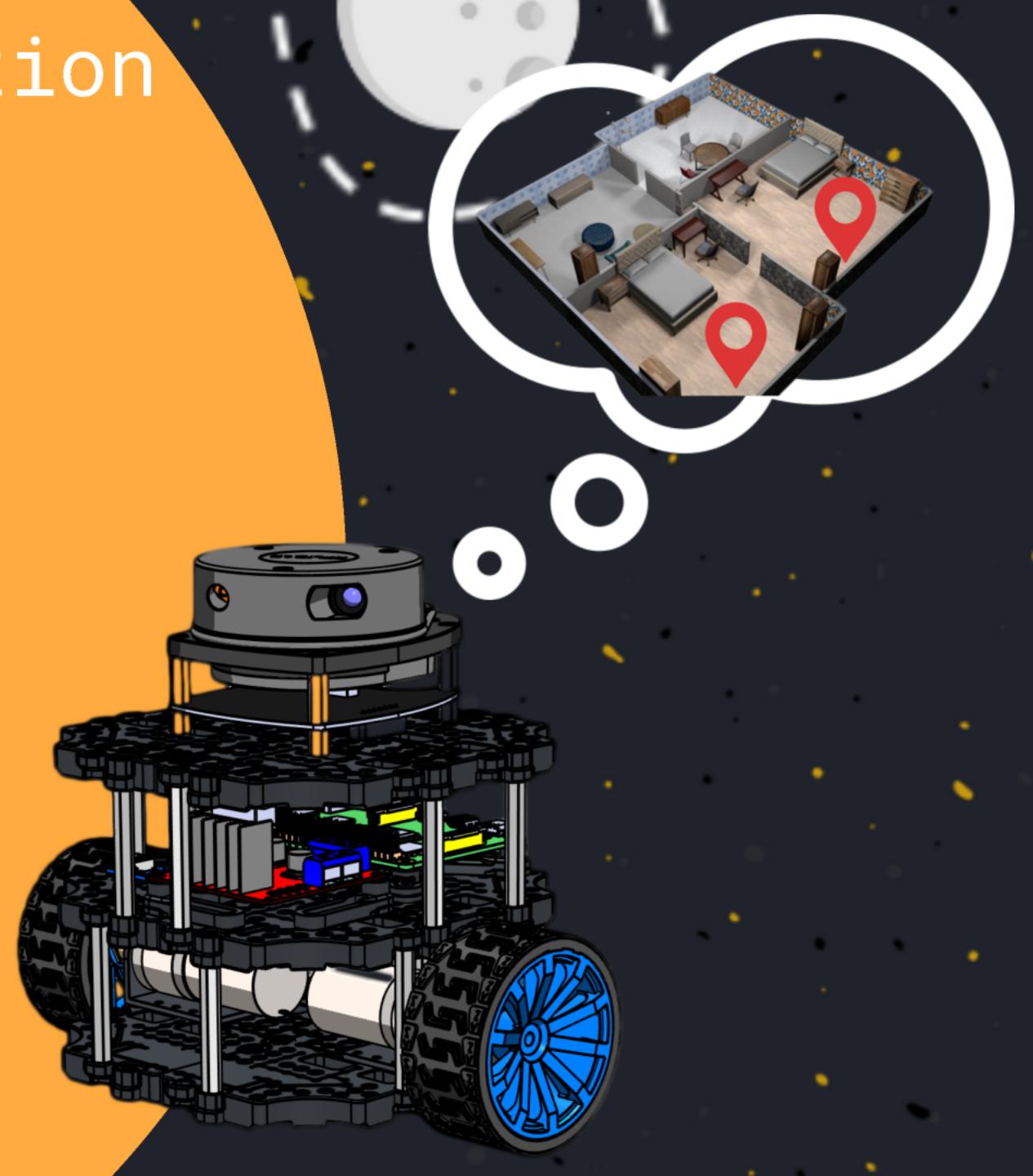
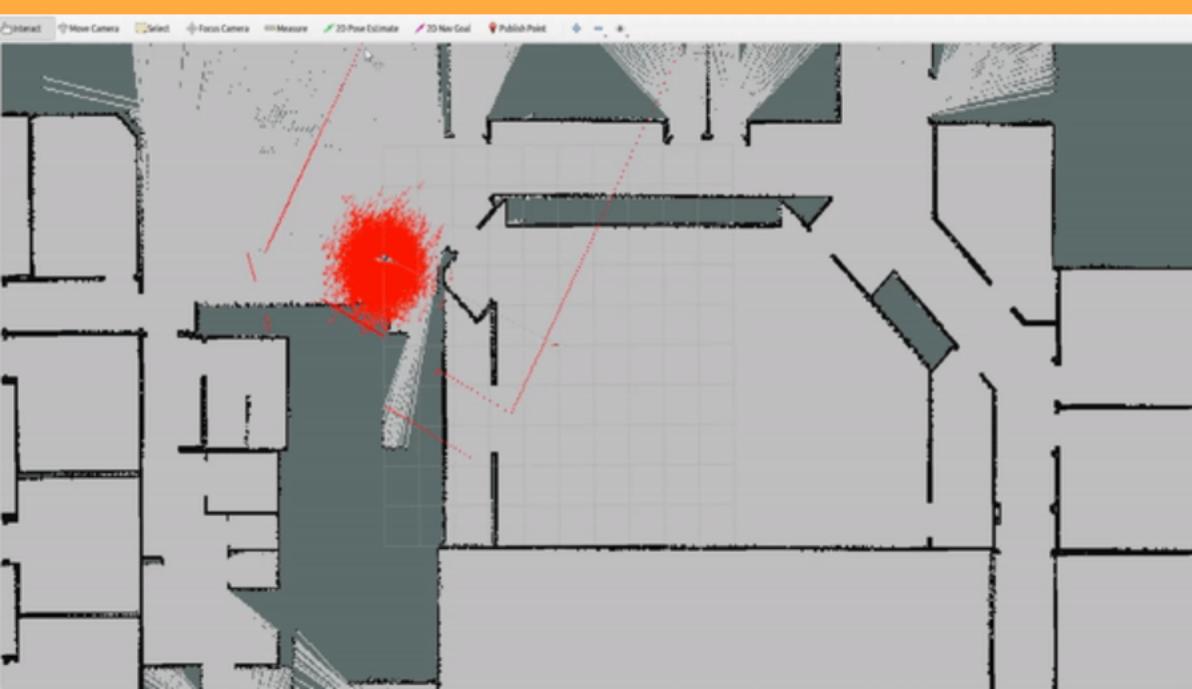
# Mapping and Localization

- Mapping



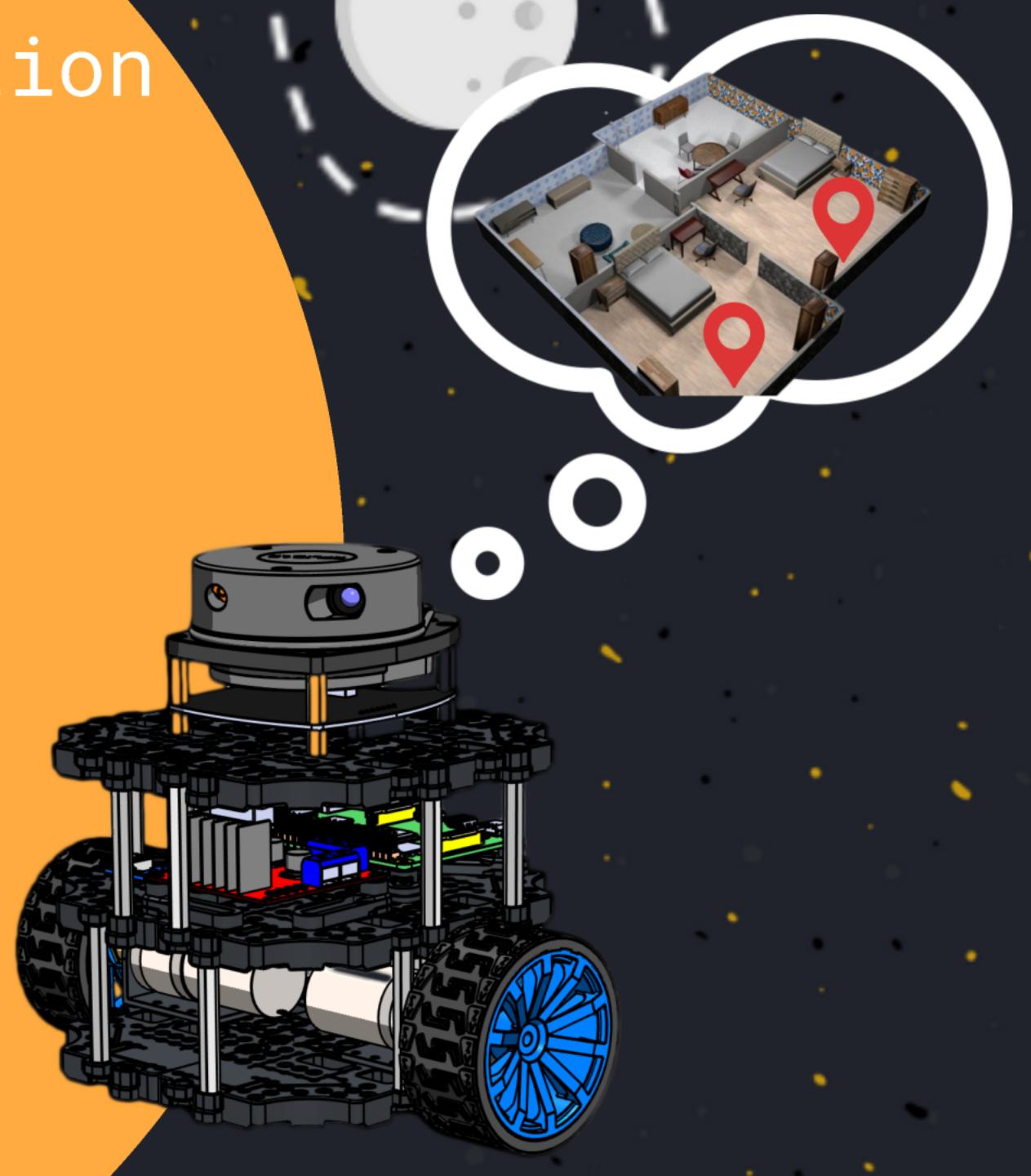
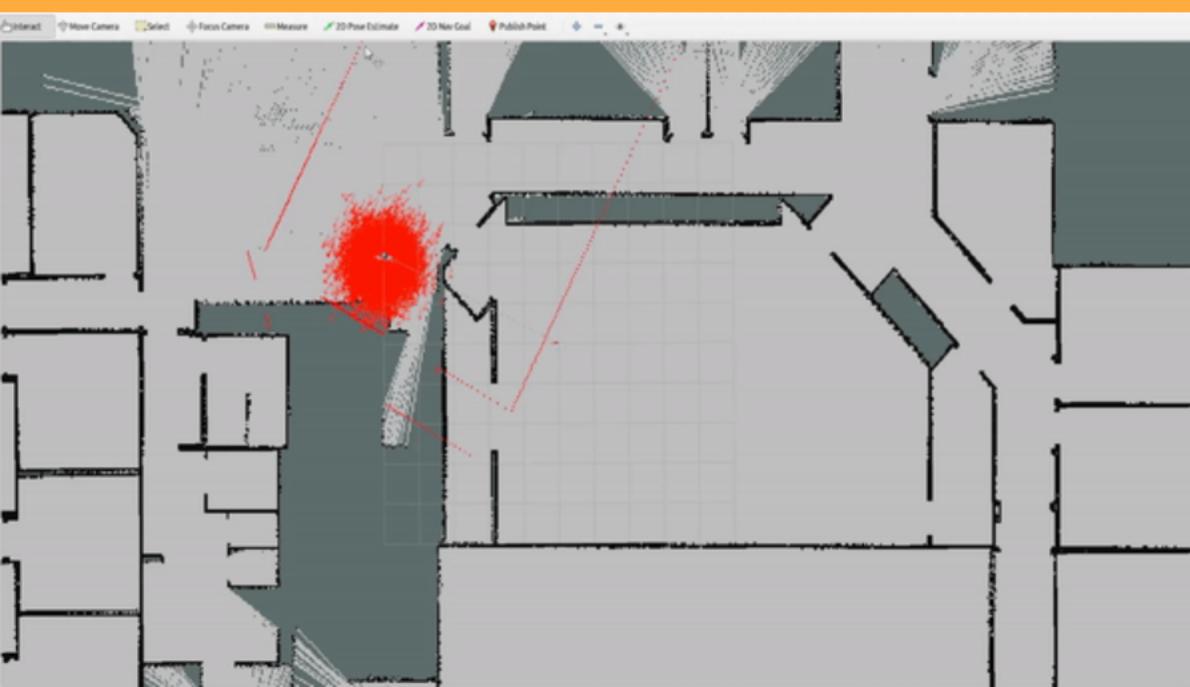
# Mapping and Localization

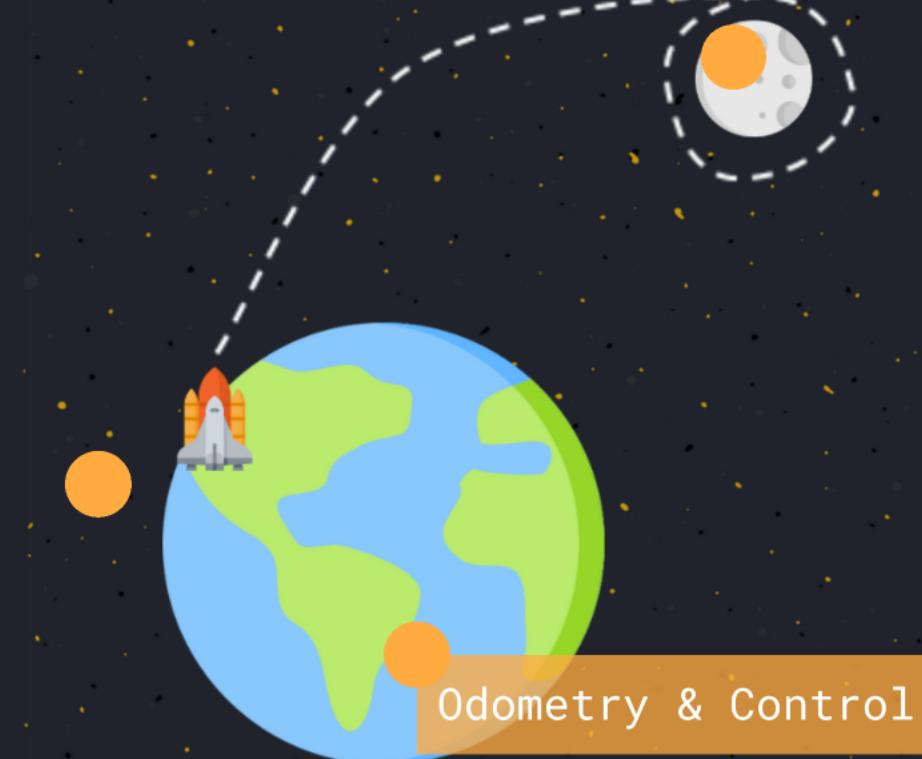
- Mapping
- Localization



# Mapping and Localization

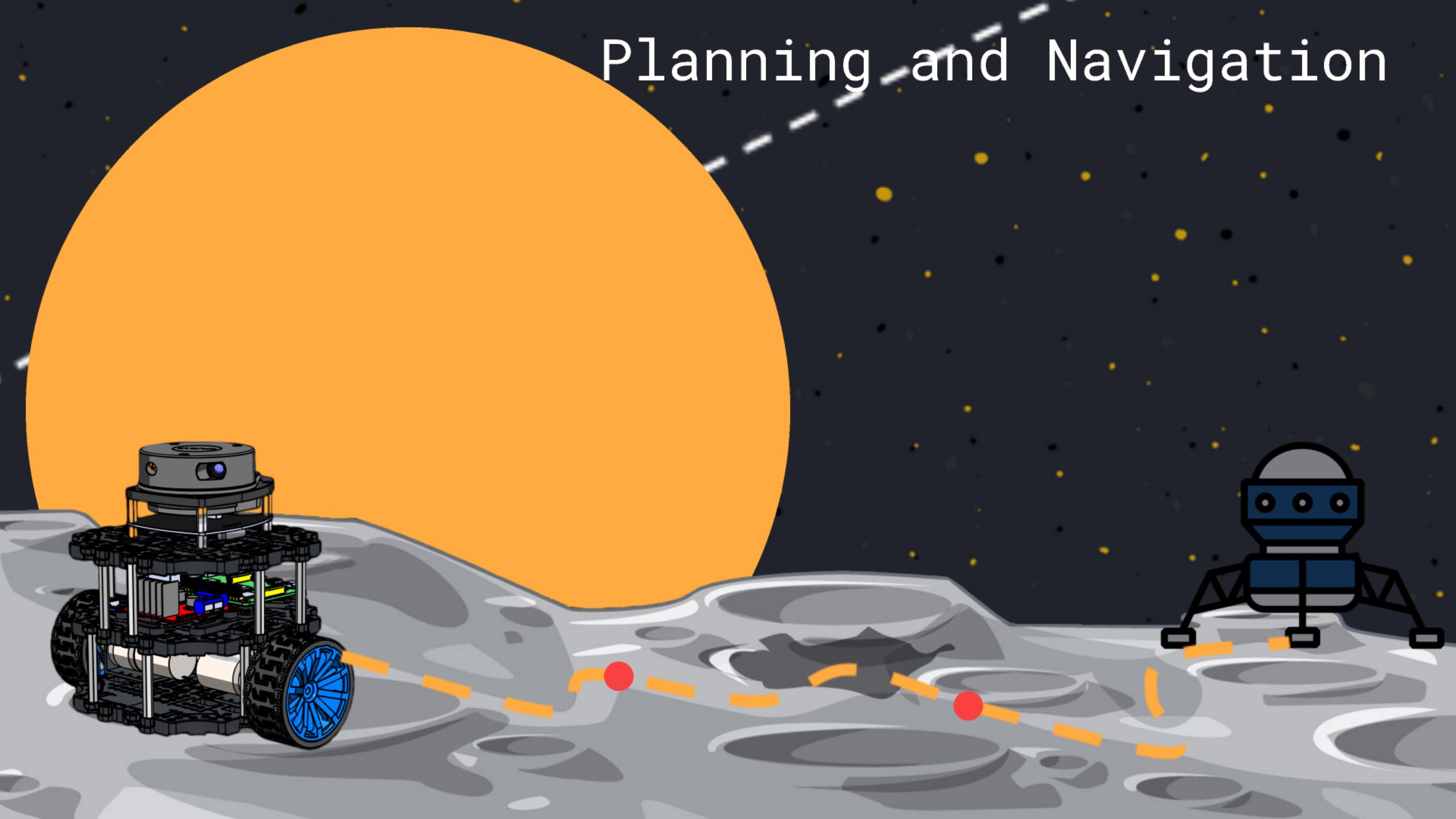
- Mapping
- Localization
- SLAM







# Planning and Navigation



# Planning and Navigation

- Path Planning



# Planning and Navigation

- Path Planning
- Obstacle Avoidance



# Planning and Navigation

- Path Planning
- Obstacle Avoidance
- Behavior Trees







Planning & Navigation



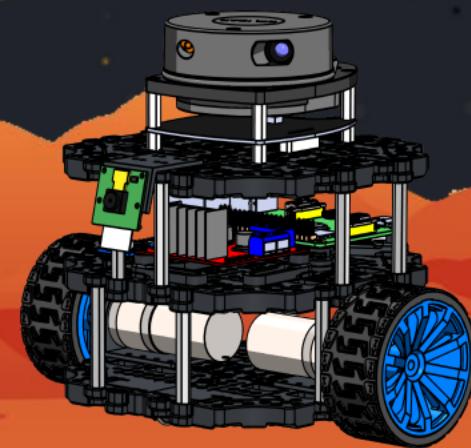
Mapping & Localization



Odometry & Control

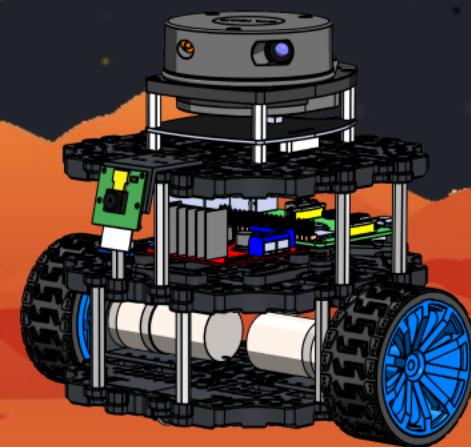


# Vision and Perception



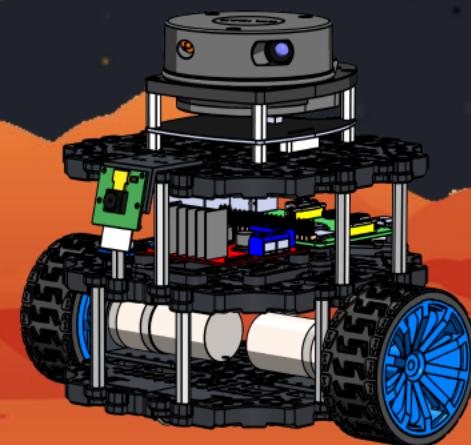
# Vision and Perception

- Visual Odometry



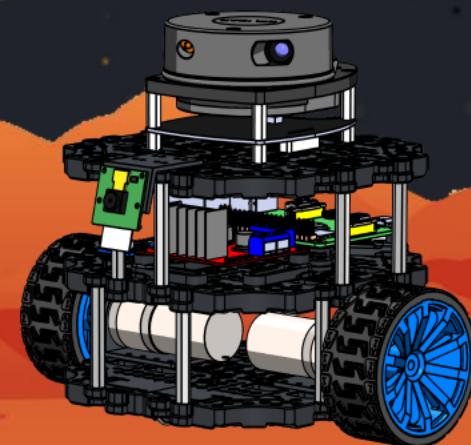
# Vision and Perception

- Visual Odometry
- Visual SLAM



# Vision and Perception

- Visual Odometry
- Visual SLAM
- Object Recognition and Tracking





Planning & Navigation



Mapping & Localization



Odometry & Control



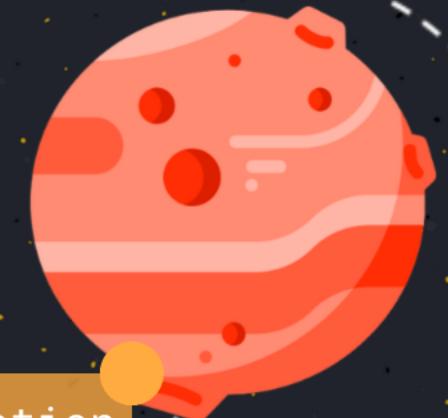


Mapping & Localization

Odometry & Control

Planning & Navigation

Vision & Perception



# Antonio Brandi

## Team Leader - Autonomous Navigation Engineer

Robotics and ROS 2 - Learn by Doing!  
Manipulators



Self-Driving and ROS 2 - Learn by Doing!  
Map & Localization



Robotics and ROS - Learn by Doing!  
Manipulators



Self Driving and ROS - Learn by Doing!  
Odometry & Control



# Antonio Brandi

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Robotics and ROS 2 - Learn by Doing!  
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Robotics and ROS - Learn by Doing!  
Manipulators



Self Driving and ROS - Learn by Doing!  
Odometry & Control



# Antonio Brandi

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Team Leader - Autonomous Navigation Engineer



# Antonio Brandi

Team Leader - Autonomous Navigation Engineer





Mapping & Localization

Planning & Navigation



Odometry & Control

Vision & Perception





- Setup the environment carefully



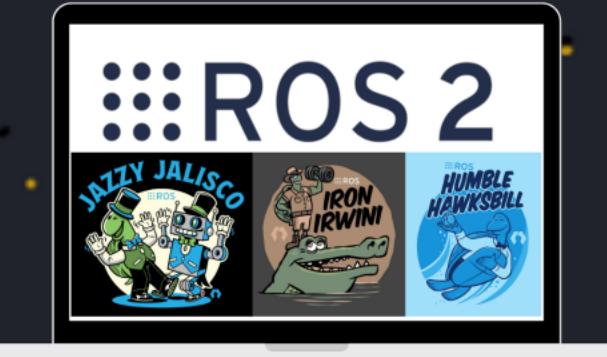
- Setup the environment carefully



- Setup the environment carefully



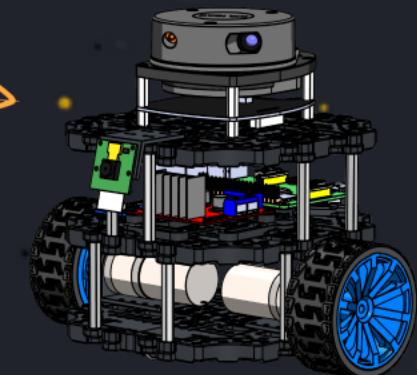
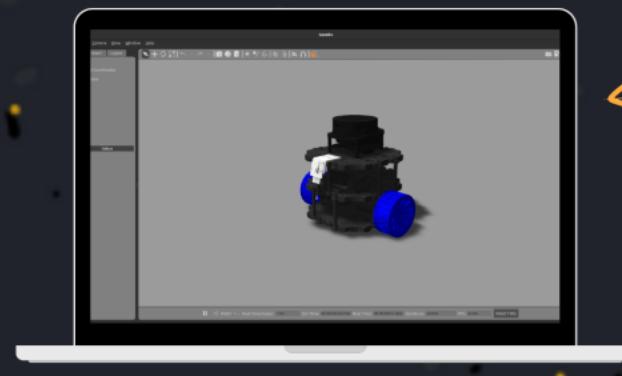
- Setup the environment carefully
- Focus on Concepts not Code



- Setup the environment carefully
- Focus on Concepts not Code



- Setup the environment carefully
- Focus on Concepts not Code



- Setup the environment carefully
- Focus on Concepts not Code
- Take your time to experiment





Mapping & Localization

Odometry & Control

Planning & Navigation

Vision & Perception

