

Just1: An Open-Source Autonomous Mecanum Wheel Robot

Nicolas Rodríguez

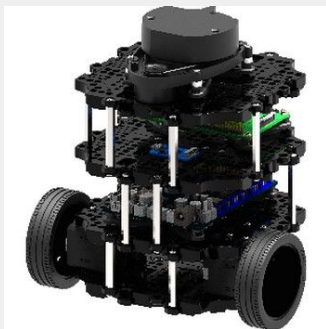
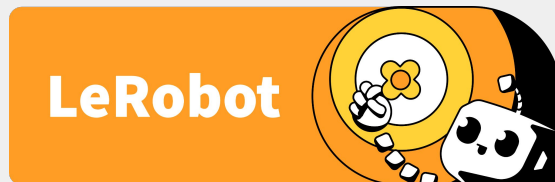
Breaking news: Open Source is cool

2

ROS 2™



GAZEBO



But Hardware is expensive

3

TURTLEBOT3 Burger



Raspberry Pi 4 (2GB)

TURTLEBOT 3 BURGER RPI4 2GB...

\$758.20

OUT OF STOCK >>

☐ Compare

TURTLEBOT3 Burger



Raspberry Pi 4 (4GB)

TURTLEBOT 3 BURGER RPI4 4GB...

\$783.50

ADD TO CART >>

☐ Compare

TURTLEBOT3 Waffle Pi



Raspberry Pi 4 (4GB)

TURTLEBOT 3 WAFFLE PI RPI4 4G...

\$1,933.61

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TURTLEBOT3 Waffle Pi



Raspberry Pi 4 (2GB)

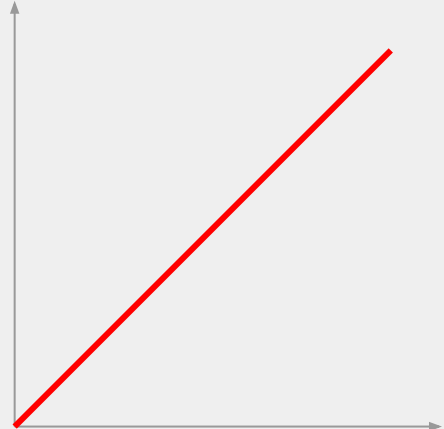
TURTLEBOT 3 WAFFLE PI RPI4 2G...

~~\$1,825.34~~ \$1,642.80

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☐ Compare

MONEY

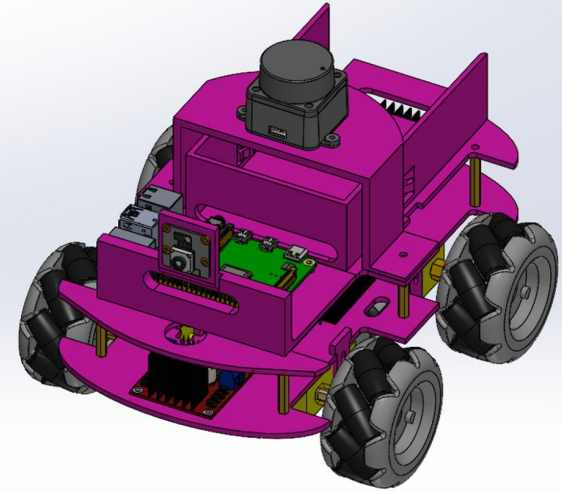
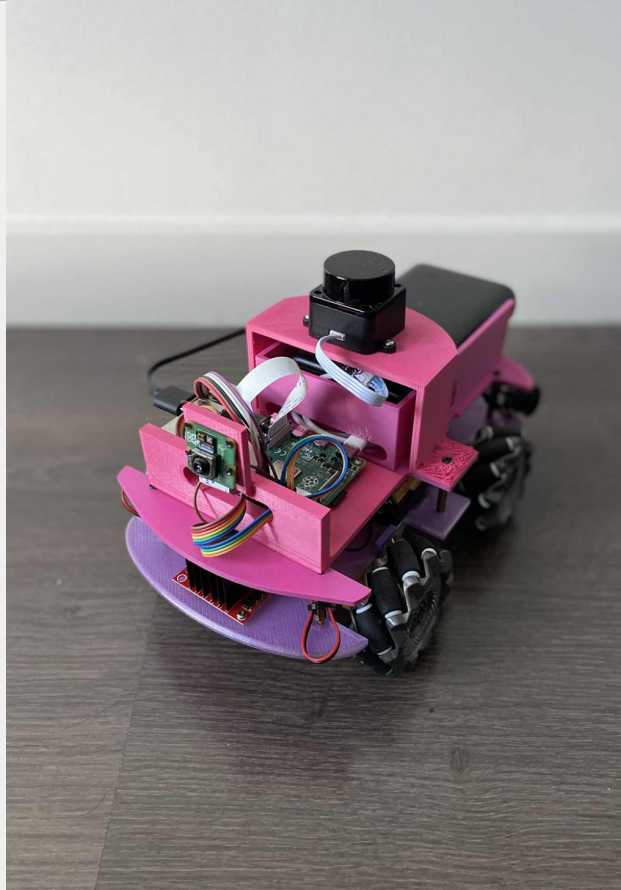


MONEY

Just1: Autonomous Mecanum Wheel Robot

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• Raspberry Pi v4 8 Gb	\$80
• LD19 2D Lidar	\$70
• Pi Camera 3	\$25
• 5V 3A Power Bank	\$25
• 4 Wheel + TT motors	\$15
• 2 L298N Drivers	\$15
• 6 AA Batteries	\$10
• Micro SD Card	\$5
• IMU 6050	\$5
• New knowledge	Invaluable
Total	\$250

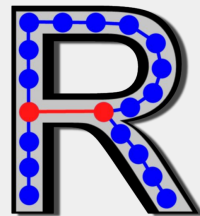


Just1: Autonomous Mecanum Wheel Robot

5



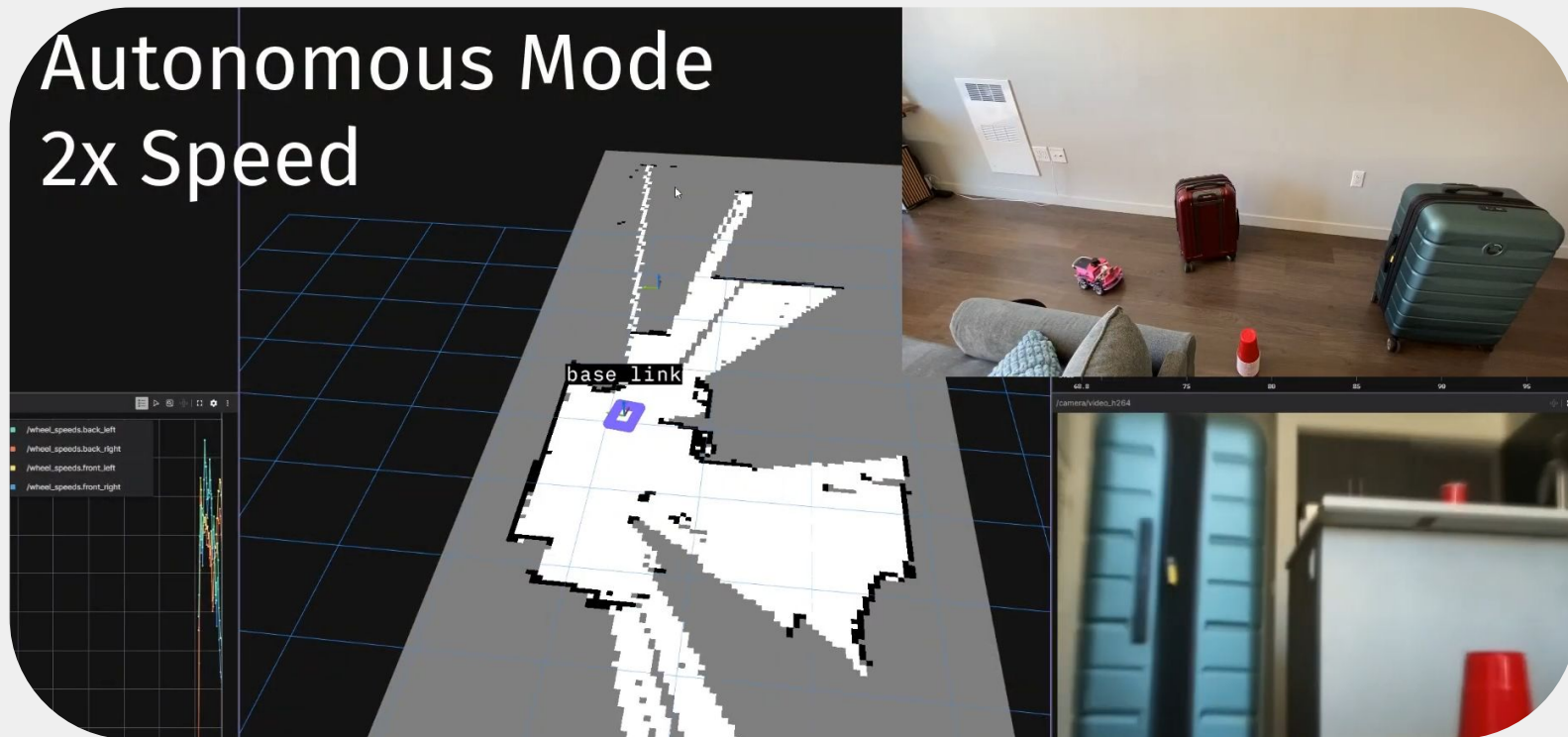
NAV2



RTAB Map SLAM

Just1: Autonomous Mecanum Wheel Robot

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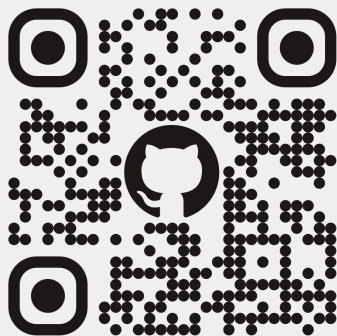


Just1: Next steps ideas

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- Open CAD
- Open BoM
- Open Code
- Navigate manually or autonomously
- Omnidirectional movement

NRdrgz/Just1



- Docker image
- Add wheel encoders
- Camera + Lidar for SLAM
- Sim replica in Isaac Sim

NOW

**ONE
DAY?**