Agnieszka Węgierska, MSc

EDUCATOR, RESEARCHER

HEART Project
(Help educators to teach through robotic tools)
no. 2021-1-PL01-KA220-ADU-000035164
Database and Guide on Educational Robotics

- **Please, introduce yourself**

I am a PhD candidate at the Lodz University of Technology and the teacher working with university students (engineering courses: Mobile robots, Service robots).

- **What type of educational robot does your organization have? How and in what contexts your robot be used?**

We have based these two courses on Kit-based robots TurtleBOT3 Burger. We started using the robots in 2019. Firstly, we have used the robot for testing behavior of autonomous mobile robots in the industrial scenario – for that purpose we have built the model of some interior of the factory/storage in scale and ran robots, checking precision of localization and quality of navigation algorithms. Then we have prepared teaching material and laboratory exercises for Mobile robots. We teach kinematics, trajectory planning, as well as obstacle avoidance and mapping. More recently these exercises have been adapted to the next course – Service robots – where they are used as programmable mobile platforms imitating various tasks.

- **Which job/ skill/ activity is supported by the robot?**

Mainly electrical engineering and software. Robots also help to understand control algorithms.

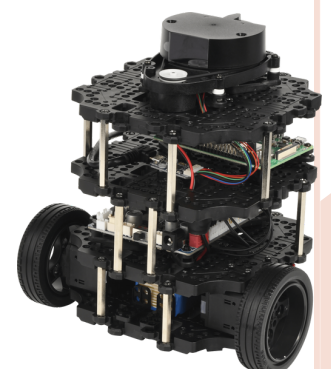- **If not confidential, who provided your organization with this robot?**

https://www.roscomponents.com/es/12-robots-moviles.

- **If not confidential, what was the costs for implementation?**

500EUR

- **How long did the development agent of the education scenario take?**

12 months

WWW.HEARTROBOTICSPROJECT.EU

- **Have you experienced any problem(s) with the robot?**

It was difficult to use many advanced algorithms on the platform.

- **How was the problem resolved?**

More advanced algorithms are running on the master computer.

- **What consequences did this have on your day-to-day operations?**

Teaching materials are updated after the semester based on problems that appeared during laboratories and classes.

- **Is there any ready to use content that you can share with us?**

Materials are available in Polish language now.
Here is the link to our page with instruction of the docker installation and how to use the software: http://robotyka.p.lodz.pl/pl/roboty-mobilne

- **Are there tutorials for the use of the robot?**

Yes.
The main documentation and tutorials are available here: http://wiki.ros.org/
and materials about turtlebot3 robot:
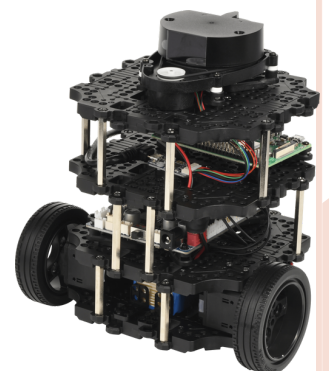https://emanual.robotis.com/docs/en/platform/turtlebot3/quick-start/

- **Does the robot need additional kit of components to be fully working in the chosen application?**

We are using the base platform, but it is possible to extend it.

Co-funded by the
Erasmus+ Programme
of the European Union