

At full throttle with ROOBOPOLI

April 29, 2022

Hackaton on Robotics for smart cities organized by University of Trento, FBK, STMicroelectronics and Associazione Perlatecnica; in parallel with the IEEE workshop "Metrology for Industry 4.0 & IoT".

Within the project [Roobopoli](#), one of the main activities consists in building and programming vehicles called Roobokarts, which will have to move autonomously on the streets of Roobopoli, which represents a smart city.

Participants in the hackathon will have to develop, on the Roobopoli platform, functionalities such as the ability to drive, to recognize traffic lights and obstacles, to recognize substances in the air, integrating them on Roobokarts.

Three teams will compete. The participants of each team will have to integrate on the RoboKart platform such functionalities and equip Roobopoli with a gas detection system.

The hackathon is aimed at high school, undergraduate, graduate and doctoral students. Regardless of age and current course of study, teams will be formed that will allow all members to expand their knowledge, be evaluated, and connect with scientific and business experts.

The hackathon is open to all students residing in June in Italy and in particular to Erasmus students in the country. A total of **30 students will be admitted**.

The competition will take place on June 7, 8 and 9 at the “FABIO FERRARI” SCIENTIFIC AND TECHNOLOGICAL HUB (Povo-2) of the University of Trento.

Scientific director and organizer of the hackathon is Prof. Davide Brunelli of the [Department of Industrial Engineering](#), University of Trento.

The evaluation committee for the projects developed is formed by representatives of [Arrow](#), FBK, Associazione [Perlatecnica](#), [STMicroelectronics](#) and [University of Trento](#).

[CLICK HERE](#) to sign up for the hackathon and for more information on the required technical background.

The hackathon will consist of two challenges over the three days, as follows:

- CHALLENGE 1: Each team will have its own pre-assembled Roobokart and will have to complete the basic Roobokart mission: “The vehicle will move autonomously on the streets of Roobopoli staying on the track, respecting signs and traffic lights, and stopping temporarily in the presence of obstacles and crossing intersections choosing randomly the direction to take among those possible.”
- CHALLENGE 2: teams will be challenged to integrate an environmental sensor developed by Fondazione Bruno Kessler into Roobopoli, allowing for traffic light management and air analysis to coexist.

PROGRAM:

- June 7: On the morning of the first day of competition, experts from Perlatecnica and FBK will hold introductory seminars to get challengers started in the competition. The competition rules will also be explained in detail. At the end of the seminars, teams will have the remaining part of the day to start implementing the requirements of the challenges.
- June 8: Teams will continue to develop requirements for proposed challenges
- June 9: The morning of the third day will be dedicated to the verification of the implementations. A jury of experts will evaluate the behavior of the vehicle, assigning bonuses and penalties and determining the ranking. The team with the highest score will be the winner of the Roobopoli Challenge!

STMicroelectronics and FBK provide to the initiative respectively the “Nucleus” control boards and the gas sensors, with the intent to stimulate the involvement of new generations in the development of cutting-edge technologies. Roobokarts are provided by Associazione Perlatecnica.

STMicroelectronics and FBK promote and support this initiative as part of the dissemination activities of the research results produced by the [IPCEI](#) project.



ROOBOPOLI H

7-9 June 2022

promoted by FBK, Perlatecnica, STMicro

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