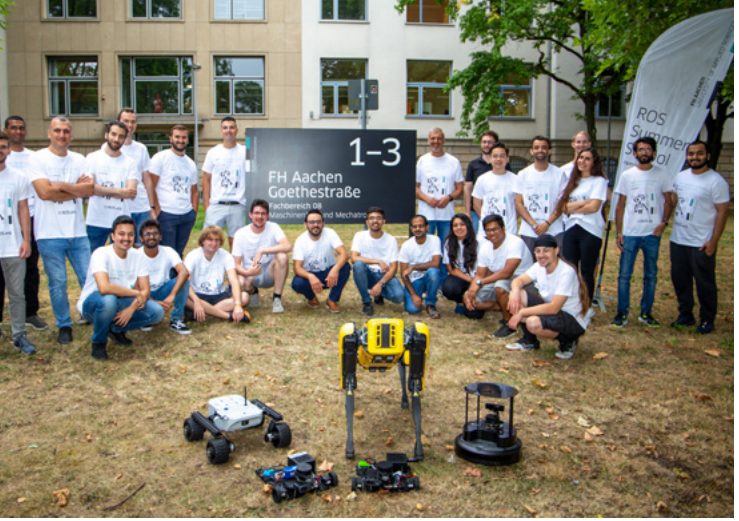


Information
Application

The course will be taught in English. Participants can be awarded with 4 ECTS credit points on completion of the ROS Summer School.

ROS Summer School location
FH Aachen | University of Applied Sciences
> Faculty of Mechanical Engineering and Mechatronics, Goethestraße 1 in 52064 Aachen, Germany
> Faculty of Electrical Engineering and Information Technology, Eupener Straße 70 in 52066 Aachen, Germany

Requirements | Applicants should have a basic knowledge of at least one programming language (i.e. Python or C++).

For more information please refer to our ROS homepage www.fhac.de/aaa/ros

For any further questions, please contact the ROS team: ros@fh-aachen.de

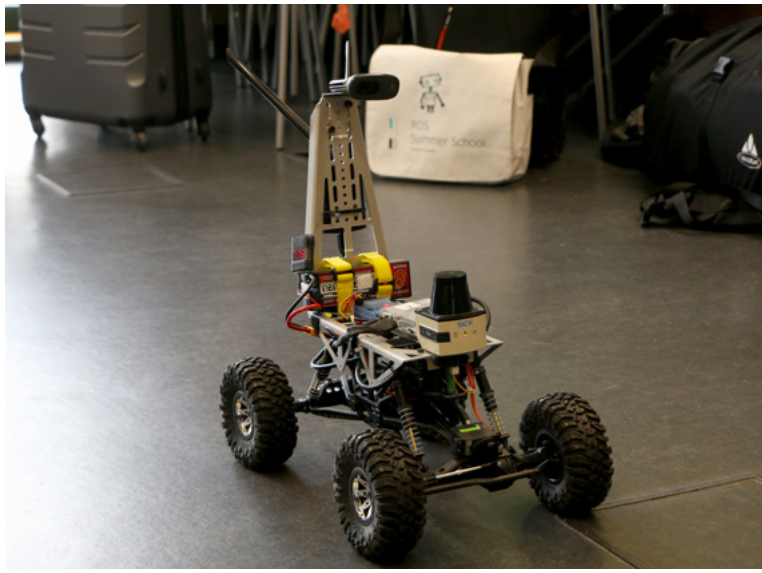
For ROS summer school participation, please register here: https://eveeno.com/ROS_Summer_School_2023

The registration fee is 500 Euro and includes only beverages. Costs for meals and day trips are not included in the fee. Meals are available in the refectory. You can register and pay for excursions later on site.

FH AACHEN
UNIVERSITY OF APPLIED SCIENCES

Robot Operating System (ROS) Summer School 2023
ROS Training and Competition at FH Aachen

organized by MASCOR (Mobile Autonomous Systems and Cognitive Robotics)



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ROS.org
OpenCV
ubuntu

Bundesministerium für Bildung und Forschung
DAAD

Why ROS?

There has been remarkable progress in the field of mobile robotics over the last couple of years due to advanced hardware like 3D sensors and powerful embedded systems for processing. However, the software has been upgraded as well: when Willow Garage launched the first version of ROS (Robot Operating System) in 2010, they started a standardization of the „middleware“ which drives the world of mobile robotics.

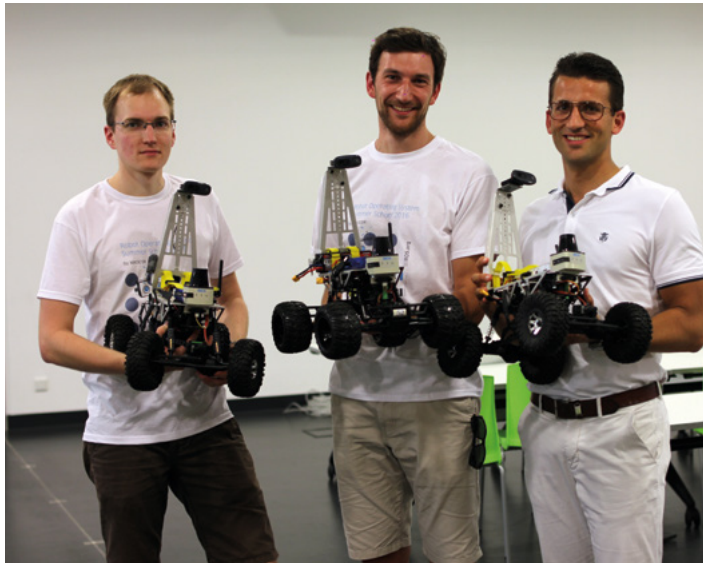
ROS is open source and offers the required services of an operating system. It is fine grained and consists of numerous reusable modules. It also provides tools and libraries for obtaining, building, writing, and running code across multiple computers with a powerful communication engine. ROS offers solutions for the main problems in mobile robotics: localisation, mapping, path planning, locomotion and perception.

Why another ROS Summer School?

Our first ROS Summer School in 2012 showed that a lot of students are interested in mobile autonomous systems, but do not know how to start. Our ROS Summer Schools provide the right starter kit by using our robotic hardware and – of course – ROS software. We first start with some days of introductory courses, before we tackle the main task of mobile robotics, i.e. perception, localization, mapping and path planning.

A highlight is a competition at the end of the second week: Summer School participants form different teams that have the task to design a typical mobile robotic application like indoor/outdoor exploration. They all use the same hardware, powered by their learnt ROS skills.

The ROS Summer School includes also some leisure activities, such as trips to nearby cities such as Cologne, Bonn or Maastricht. Last but not least, we have a farewell barbecue at the end.



Preliminary program planned for 14th August until 25th August 2023

First week: 14th until 18th August

14th August	Registration, ROS show, welcome BBQ
15th August	ROS2 Basics: Navigating in Linux and ROS2 file system
16th August	ROS2 Basics: ROS2 internal communication
17th August	Hardware interfaces, transformations in ROS2
18th August	Introduction to GAZEBO simulator, April tag recognition

Second week: 21st until 25th August

21st August	Localisation & mapping
22nd August	Path planning
23rd August	Industrial exhibition
24th August	Exam, free hacking
25th August	Free hacking, competition, farewell BBQ

Additionally, we offer excursions during the week to explore Aachen and other nearby cities (e.g. Cologne, Maastricht, Bonn).