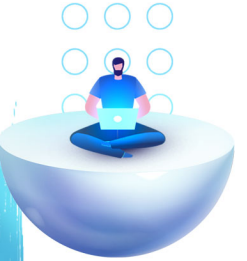
Attendee Guide

4th ROS DEVELOPERS DAY

Organized by

The Construct

Contents



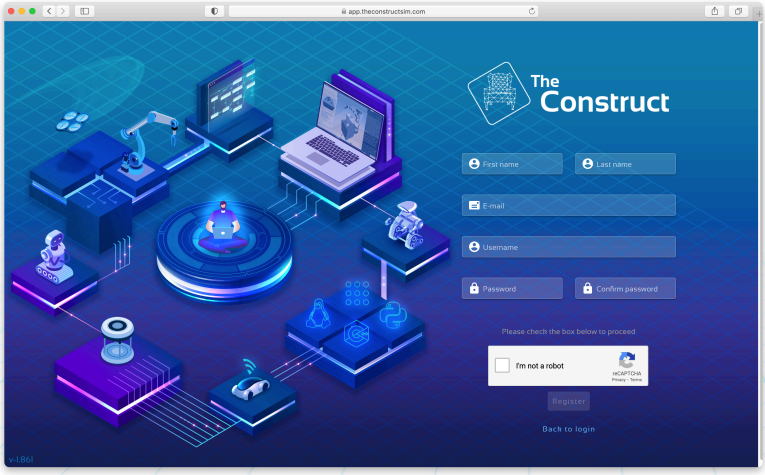
4th ROS DEVELOPERS DAY

Introduction to The Construct

The Construct is the conference virtual platform that hosts all event content. Use The Construct's platform to watch conference sessions, develop ROS projects and interact with other participants.

- **This platform is suggested for use from desktop computers only.**
- All session times are displayed in your local time zone by default.

1. The Construct Access: Get Logged In



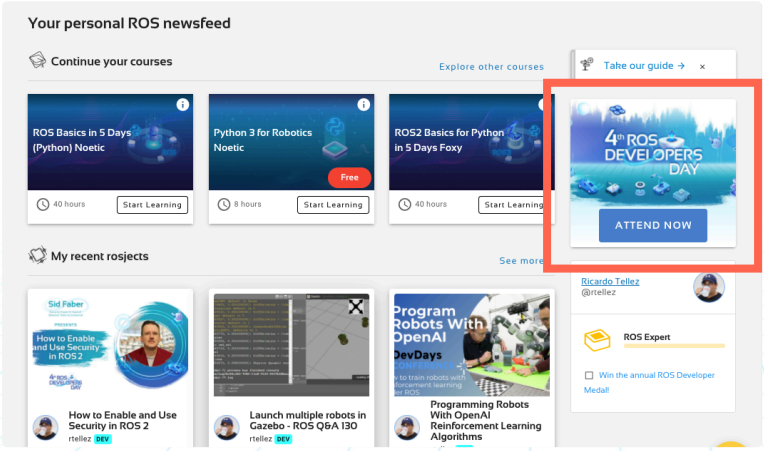
A. Create a The Construct account.

Go to this link below to enter your email address and create a password for total conference access:

https://app.theconstructsim.com/#/

If you already have an account, just log in.

1. The Construct Access: Get Logged In

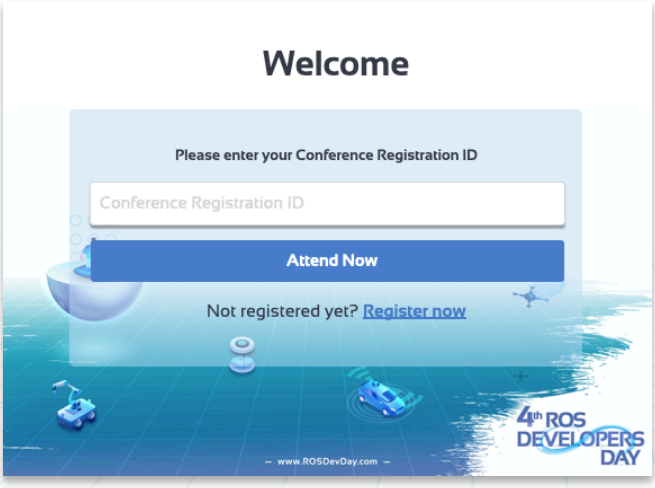


B. Click the "ATTEND NOW" button.

After logging into The Construct's platform, you will see the "**ATTEND NOW**" button in the ROSDevDay's banner on the right side of the homepage.

Note, the banner is only visible one hour before the conference start time.

1. The Construct Access: Get Logged In



C. Enter your Registration ID

You should have received your registration ID via email from info@rosdevday.com.

If you have not seen that email in your inbox, please check your spam folder or contact us at info@rosdevday.com.

4th ROS DEVELOPERS DAY

2. Access Live Streams & Join Discussions

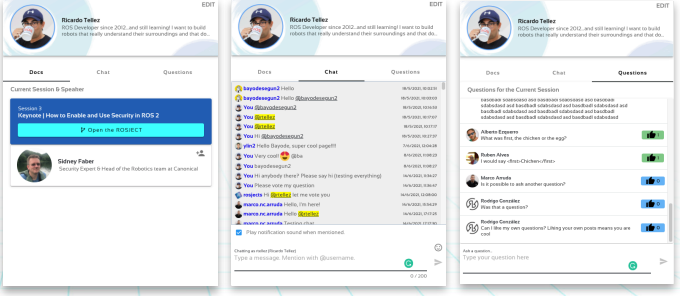
After logging into the conference page, you will see the event's screen as follows:

4th ROS DEVELOPERS DAY

2. Access Live Streams & Join Discussions

Once the live broadcast begins, you can initiate the following actions with the three tabs on the right side of the screen:

- **Docs:** Find the ROSJECT for each session and check the speaker's profiles to follow them.
- **Chat:** Interact with other conference participants and The Construct's help team.
- **Questions:** Ask the speakers questions. You can also "Upvote" a question that has been asked to help hosts pick up questions based on popularity.

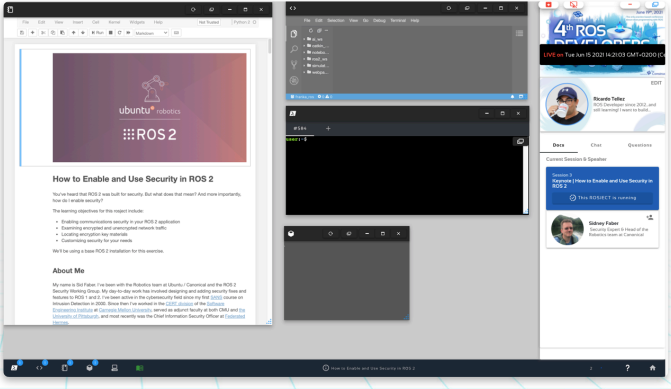


3. Open ROSJECTs & Live Practice

Click the "Open the ROSJECT" button.

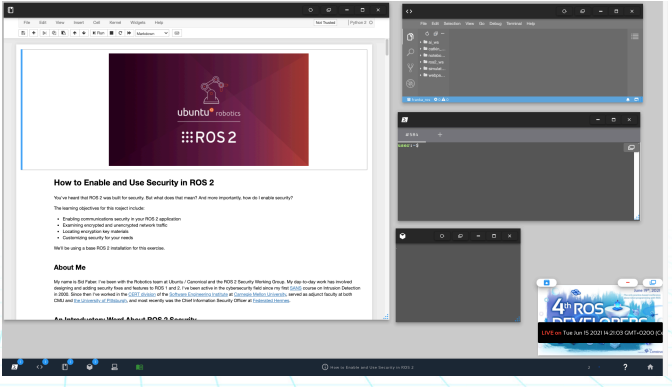
You automatically jump to ROS development mode, and **you have access to the Notebook, code and robot simulation prepared for practice with the corresponding speaker in real-time**.

Once in ROS development mode, you can continue to watch the live stream and other interactions in the right column.

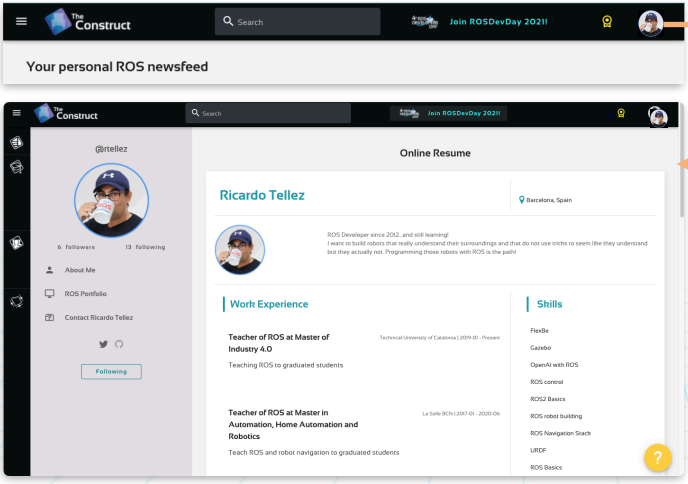


3. Open ROSJECTs & Live Practice

If you need more space to develop, you can click the "Hide the Sidebar" icon, , and then only the live screen will appear.



4. Complete Your ROS Developer Profile

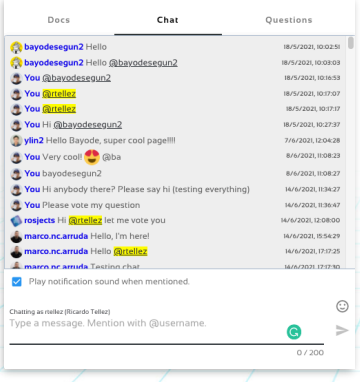


You can access your ROS Developer Profile by clicking your "**Profile**" picture at the top right corner of the screen.

You can introduce yourself, and share your ROS experience and achievements with other ROS developers. This space is also an opportunity for you to advertise your ROS skills and achievements to robotics companies, event sponsors, and potential employers.

5. Help During the Meeting

For assistance with the virtual platform, go to the Live-Chat and leave us a message.



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4th ROS DEVELOPERS DAY

June 19th, 2021
Agenda

4th ROS DEVELOPERS DAY

www.ROSDevDay.com

#ROSDevDay21

Morning (CEST)

7:00AM — **Opening Session**

7:10AM – 8:00AM — **Practical Demonstration of New User-Requested Nav2 Features**
By Steve Macenski, Engineering Lead at Samsung Research America Open Source Robotics

8:10AM – 9:00AM — **How to Enable and Use Security in ROS 2**
By Sid Faber, Security Expert & Head of the Robotics team at Canonical

9:10AM – 10:00AM — **Build Your Own ROS 2 Robot from Scratch**
By Yutaka Kondo, Engineer at Preferred Networks, Inc. & Author of ROS2 ではじめよう

10:00AM – 10:20AM — **Coffee Break**

10:20AM – 11:10AM — **Multi-Floor Navigation with ROS Navigation Stack**
By Ammaar Solkar, Student at M.H. Saboo Siddik College of Engineering, India

11:20AM – 12:10PM. — **Controlling Remote Robots with Low Latency**
By Dominik Nowak , CTO at Husarnet | CEO at Husarion

12:20PM – 1:10PM. — **Obscure(d) Pointclouds: Cleanup Guide**
By Martin Pecka, Researcher at Vision for Robotics & Autonomous Systems group ***Czech Technical University in Prague***

Afternoon (CEST)

1:10PM – 2:10PM — **Lunch Break**

2:10PM – 3:00PM — **ROS and Flower: ROS Node Meet Real Federated Learning**
By Pedro Porto Buarque de Gusmão, Senior Research Associate at University of Cambridge

3:10PM – 4:00PM — **From ros_control to ros2_control**
By Bence Magyar, Research Schientist at Five AI and Denis Stogl, Robotics Consultant

4:10PM – 5:00PM — **A Simple Introduction to Autonomous Vehicles**
By Theodore Faklaris, Student at Technical University of Crete

5:00PM – 5:20PM — **Coffee Break**

5:20PM – 6:10PM — **Sequencing Motion Planning Tasks with MoveIt Task Constructor**
By Jorge Nicho, Robotics Research Engineer at Southwest Research Institute

6:20PM – 7:10PM — **Zero Copy Transport with Fast DDS**
By Iker Luengo Gil, Senior Software Engineer at eProsima

7:15PM – 7:30PM — **ROS Awards 2021 Ceremony**

7:30PM — **Summary & closing**

HUSARION

AUTONOMOUS MOBILE ROBOTS MADE SIMPLE

We provide mobile robotic platforms, software and connectivity solutions which allow you to build your own autonomous systems based on ROS & ROS 2 easily and efficiently.

ROSBOT 2.0

ROSbot 2.0 is an autonomous, open source robot platform based on ROS. Reinforced with a development platform and free online tools such as Web UI, set of tutorials, manuals, simulation model and more, it is a great choice for learning how to program autonomous vehicles.

MAIN FEATURES:

Reliable and powerful components:

Material: Aluminum chassis + light plastic wheels
Drive: 4 x DC motors
CPU: ARMv7-A @1.8Ghz, 2GB RAM
GPU: ARM Mali-T760 GPU
LIDAR: RPLIDAR A2
RGB-D camera: Orbbec Astra
TOF distance sensors: 4 x VL53L0X
Quadrature encoders: 4
Extension headers: 12 x GPIO (incl. UART, I2C, SPI, ADC), 2 x USB, HDMI and others.

POWERED BY ROS/ROS2

Robot Operating System is becoming a software standard in modern robotic design. It's widely used in many professional robots, and autonomous vehicles. You can get familiar with ROS quicker thanks to:

A lot of dedicated tutorials - from ROS basics through object recognition to navigation and exploration of unknown environment
Offline programming - using an extension to Visual Studio Code

ROSBOT 2.0 PRO

ROSbot 2.0 PRO is an advanced version of ROSbot 2.0. It is an autonomous, open source robot platform running on CORE2-ROS controller with powerful Intel Atom processor. It is the right choice for special tasks which require a lot of processing power such as complicated image processing.

MAIN FEATURES:

Reliable and powerful components:

Material: Aluminum chassis + alloy wheels
Drive: 4 x DC motors
CPU: Intel® ATOM™ x5-Z8350 @1.92GHz, 4GB RAM
GPU: Intel Gen 8 HD 400
LIDAR: RPLIDAR A3
RGB-D camera: Orbbec Astra
TOF distance sensors: 4 x VL53L0X
Quadrature encoders: 4
Extension headers: 12 x GPIO (incl. UART, I2C, SPI, ADC), 2 x USB, HDMI and others.

ROSbot 2.0 PRO is software compatible with ROSbot 2.0 so choose it if you need more computing power, more memory and better navigation capabilities.

PANTHER

Autonomous, mobile robot platform dedicated for outdoor applications. Based on your need it can be equipped with LIDAR, RGB-D camera, robotic arm, UWB and other non-standard equipment. Use it in agriculture, inspection, logistics and many other use cases.

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MAIN FEATURES:

Powerful specification:

- 804mm lenght x 840mm width
- 80 kg max payload
- 10 kmph max speed
- aluminium chassis
- over-the-internet programming
- built-in sensors: IMU, quadrature encoders, GPS
- expansion interface (USB, HDMI, UART, SPI, CAN, GPIO)

Optional components:

- RGB-D camera
- LIDAR
- Robotic arm
- UWB navigation
- ...and more

CUSTOM ROBOT DESIGN

We have vast experience in designing and building autonomous mobile robots (AMR) dedicated, among other, for inspection, agriculture and transportation applications. We are able to handle a full spectrum of areas associated with designing AMRs.

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