

# Attendee Guide

# 4<sup>th</sup> ROS DEVELOPERS DAY



Organized by

 **The  
Construct**

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# Introduction to The Construct

The screenshot shows the 'The Construct' website interface for ROSDevDay 2021. The main banner features the text '4th ROS DEVELOPERS DAY' in large, stylized letters, with 'June 19th, 2021' and 'The only practice-based conference about robot programming with ROS' above it. Below the banner, it says 'LIVE on Tue Jun 15 2021 14:21:03 CMT-0200 (Central European Summer Time)'. The left sidebar contains navigation links: Home, Robot Ignite Academy, Courses, Learning Paths, LIVE Classes, Team Management, Members, My Labs, ROS Dev Studio, Public Projects, My Projects, and Real Robot Lab. The right sidebar shows a user profile for Ricardo Telles, a 'Current Session & Speaker' section with a 'Keynote | How to Enable and Use Security in ROS 2' session, and a 'Keynote Sponsor' section for husarnet. The bottom section displays an 'Agenda' with a table of events.

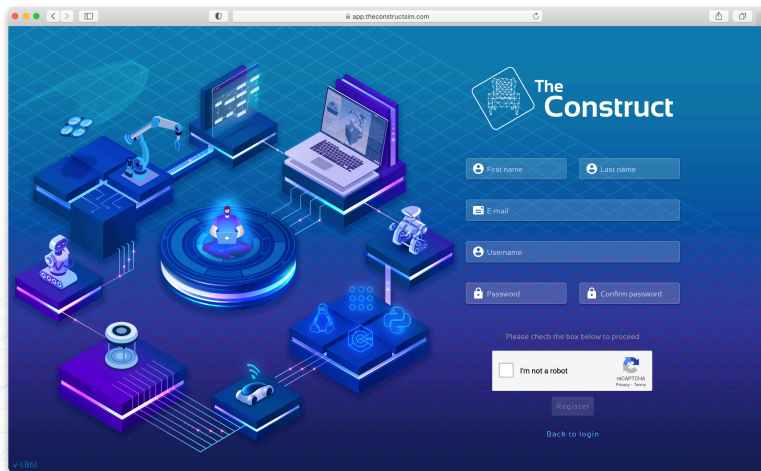
Time	Event
07:00 - 07:10	Opening Session
07:10 - 07:50	Keynote   Practical Demonstration of New User-Requested New2 Features - Steven Macrossi (ROS-TSC / Robotistix)   Samsung Research America Open Source Robotics - Engineering Lead / Advisor

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.

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# 1. The Construct Access: Get Logged In



app.theconstructsim.com

The Construct

First name

Last name

E-mail

Username

Password

Confirm password

Please check the box below to proceed

☐ I'm not a robot

reCAPTCHA

Register

Back to login

v.1.86f

## 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.

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# 1. The Construct Access: Get Logged In

The screenshot displays the ROS DevDay Construct homepage. At the top, it says "Your personal ROS newsfeed". Below this, there are sections for "Continue your courses" and "My recent projects". The "Continue your courses" section features three course cards: "ROS Basics in 5 Days (Python) Noetic" (40 hours), "Python 3 for Robotics Noetic" (8 hours, marked "Free"), and "ROS2 Basics for Python in 5 Days Foxy" (40 hours). Each card has a "Start Learning" button. To the right of these cards is a "4th ROS DEVELOPERS DAY" banner with an "ATTEND NOW" button, which is highlighted with a red rectangle. Below the course cards, the "My recent projects" section shows three project cards: "How to Enable and Use Security in ROS 2" by Sid Faber, "Launch multiple robots in Gazebo - ROS Q&A 130" by Ricardo Tellez, and "Program Robots With OpenAI DevDays CONFERENCE" by Ricardo Tellez. On the right side of the page, there is a user profile for Ricardo Tellez (@rtellez) with a "ROS Expert" badge and a "Win the annual ROS Developer Medal" button.

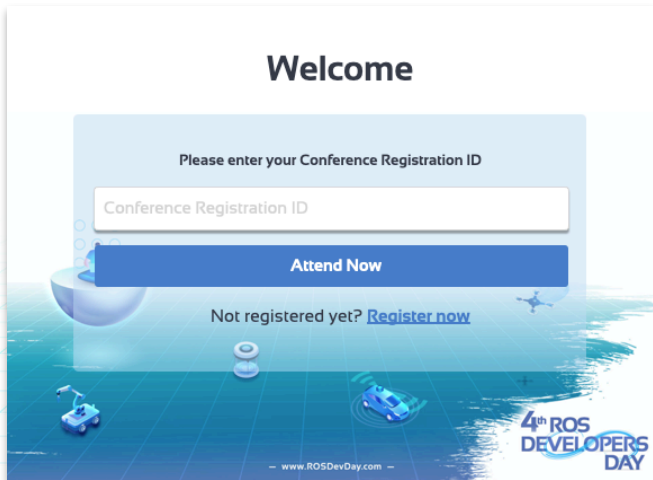
**B. Click the "ATTEND NOW" button.**

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.**

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# 1. The Construct Access: Get Logged In



**Welcome**

Please enter your Conference Registration ID

Conference Registration ID

**Attend Now**

Not registered yet? [Register now](#)

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— www.ROSDevDay.com —

## C. Enter your Registration ID

You should have received your registration ID via email from [info@rosdevday.com](mailto: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](mailto:info@rosdevday.com).



## 2. Access Live Streams & Join Discussions

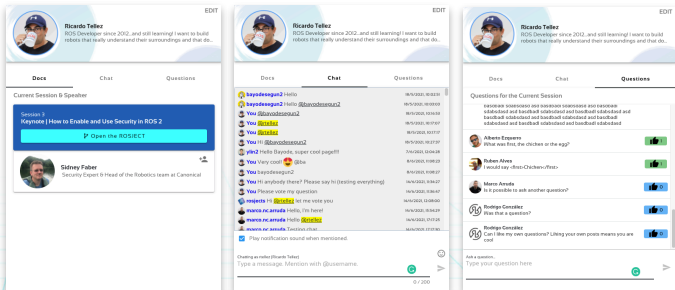
After logging into the conference page, you will see the event's screen as follows:

The screenshot displays the ROSDevDay 2021 event page on The Construct platform. The left sidebar contains navigation links: Home, Robot Ignite Academy, Courses, Learning Paths, LIVE Classes, Team Management, Members, My Labs, ROS Dev Studio, Public Projects, My Projects, and Real Robot Lab. The main content area features a large banner for the 4th ROS Developers Day, scheduled for June 19th, 2021. The banner text reads: "The only practice-based conference about robot programming with ROS". Below the banner, it states "LIVE on Tue Jun 15 2021 14:21:03 GMT+0200 (Central European Summer Time)". The right sidebar shows the current session speaker, Ricardo Tellez, with a bio: "ROS Developer since 2012... and still learning! I want to build robots that really understand their surroundings and that do...". Below this, there are tabs for Docs, Chat, and Questions. The current session is "Session 3: Keynote | How to Enable and Use Security in ROS 2", with a button to "Open the ROSJECT". Below the session information, there is a section for the "Current Session & Speaker" featuring Sidney Faber, "Security Expert & Head of the Robotics team at Canonical". At the bottom, there is an "Agenda" section with a "Showing in your local time" filter. The agenda lists two items: "07:00 - 07:10 Opening Session" and "07:10 - 07:50 Keynote | Practical Demonstration of New User-Requested Nav2 Features" by Steven Macdonald, ROS TSC / RobotKit / Sensing Research America Open Source Robotics - Engineering Lead / Advisor. A "Keystone Sponsor" section at the bottom right features the husarnet logo.

## 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.



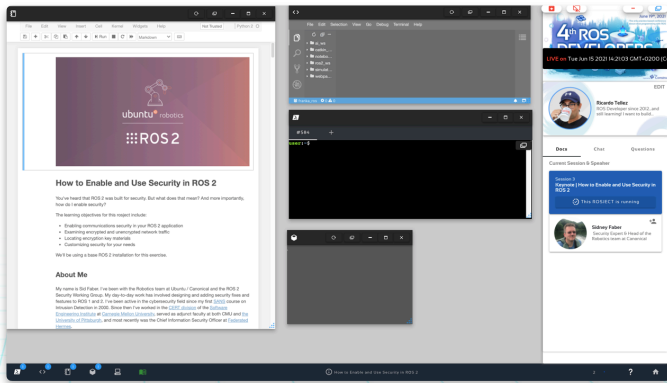
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### 3. Open ROSJECTs & Live Practice

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.

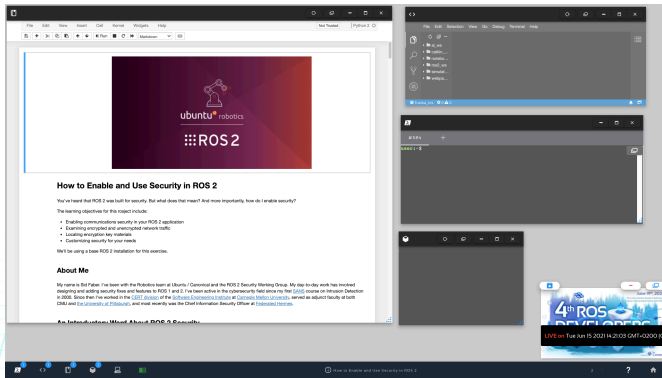
Once in ROS development mode, you can continue to watch the live stream and other interactions in the right column.



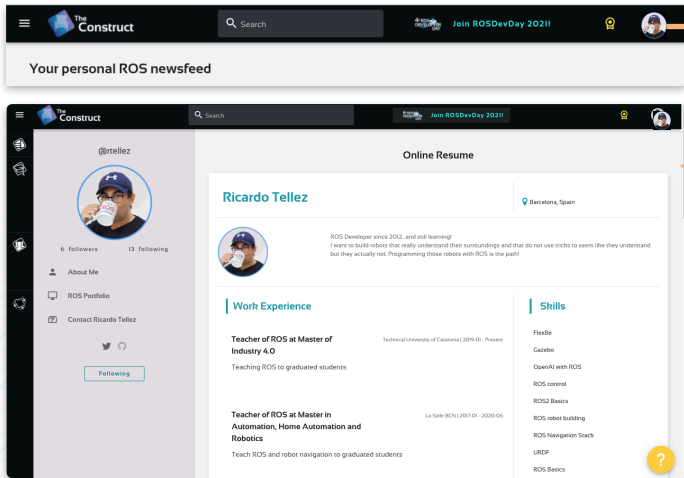
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### 3. Open ROSJECTs & Live Practice

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



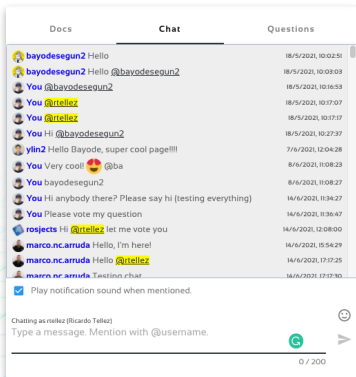
You can access your ROS Developer Profile by clicking your **"Profile"** picture at the top right corner of the screen.

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.

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## 5. Help During the Meeting

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







## THANKS TO OUR SPONSORS

KEYSTONE SPONSOR



# husarnet

GOLD SPONSORS



**HUSARION**

 **Robotnik**

**PAL**  
ROBOTICS



**Karelis**



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# June 19th, 2021 Agenda

## 4<sup>th</sup> ROS DEVELOPERS DAY

[www.ROSDevDay.com](http://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 ではじめるよう*

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*

1:10PM – 2:10PM

2:10PM – 3:00PM

3:10PM – 4:00PM

4:10PM – 5:00PM

5:00PM – 5:20PM

5:20PM – 6:10PM

6:20PM – 7:10PM

7:15PM – 7:30PM

7:30PM

### Afternoon (CEST)

#### Lunch Break

#### ROS and Flower: ROS Node Meet Real Federated Learning

*By Pedro Porto Buarque de Gusmão, Senior Research Associate at University of Cambridge*

#### From ros\_control to ros2\_control

*By Bence Magyar, Research Scientist at Five AI and Denis Stogl, Robotics Consultant*

#### A Simple Introduction to Autonomous Vehicles

*By Theodore Faklaris, Student at Technical University of Crete*

#### Coffee Break

#### Sequencing Motion Planning Tasks with MoveIt Task Constructor

*By Jorge Nicho, Robotics Research Engineer at Southwest Research Institute*

#### Zero Copy Transport with Fast DDS

*By Iker Luengo Gil, Senior Software Engineer at eProsima*

#### ROS Awards 2021 Ceremony

#### 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 VL53LoX

**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 VL53LoX

**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.



## MAIN FEATURES:

### Powerful specification:

- 804mm length 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.