

ROBOTBRAG 2026

Powering the Physical AI Revolution: A System Approach to Robotics

Overview and Information for Participants

Teknologi-workshops STMicroelectronics & EBV Elektronik

May 8th, 2026

Workshop Concept & Agenda



Powering the Physical AI Revolution

A System Approach to Robotics

Workshop concept

Workshop with hands-on lab using ST's STEVAL-ROBKIT1 mobile robotics evaluation kit

Physical AI is transforming robots from scripted machines into intelligent, embodied systems that can see, understand, and act safely in the real world. This workshop combines a broad **system and application-level perspective** with a **practical, hands-on session** using STMicroelectronics' **STEVAL-ROBKIT1** platform.

Participants will learn how **sensing, edge AI, motion control, and power** come together in real robotic systems. They will then **apply this understanding directly** by configuring, programming, and running an autonomous mobile robot, including deploying AI models on an STM32 microcontroller.

This is not just a presentation - it is a **build, flash, and run** experience that connects system concepts to working hardware.

Workshop overview

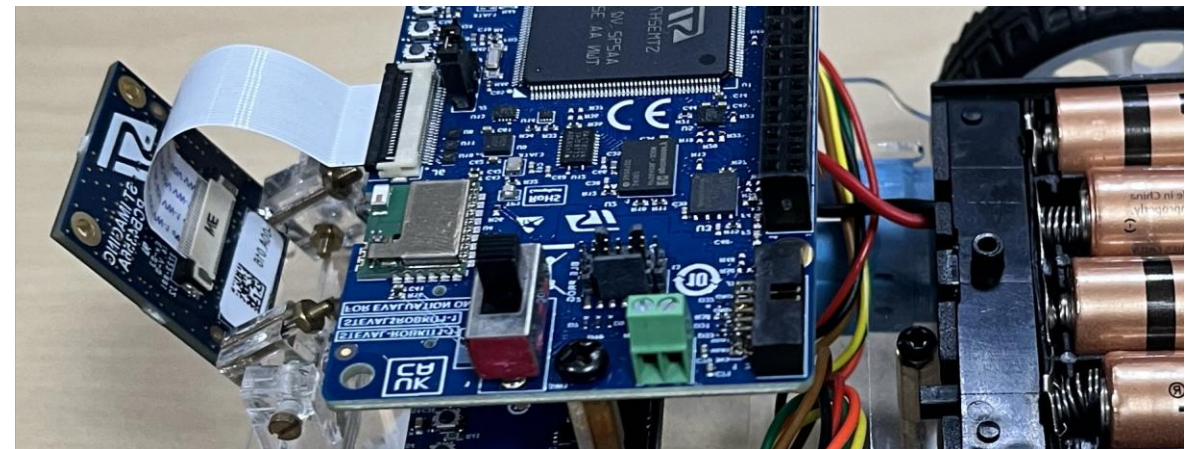
Objective

- Share ST's perspective on the state of **Physical AI** for mobile robots, humanoids, and drones **in practice**.
- See **concrete application examples** based on ST's system approach, including:
 - Robotic Hand (Vision – Decision – Action)
 - Robotic Joint module
 - Multimodal sensing and imaging for drones
- Gain **hands-on experience** with the **STEVAL-ROBKIT1** robotics kit, from firmware build and flashing to autonomous navigation and AI integration.
- Learn how to use the **STM32 development ecosystem** (STM32CubeMX, STM32CubeIDE, STM32CubeProgrammer, STM32Cube.AI) in a robotics context.
- Leave with a clear view of **how to leverage ST platforms** and tools to accelerate their own robotic projects and potential collaboration paths with ST.



Who should attend?

- Robotics startups** building mobile robots, manipulators, humanoids, or drones.
- System architects and embedded engineers** working on perception, control, or AI at the edge.
- Technical leads and innovation managers** exploring platforms to reduce time-to-market for new robot designs.
- Researchers and advanced students** engaged in embodied AI, motion control, or robotic systems integration.



Agenda

16 PAX per Session | Version as of April 29th

Time	Duration	Slot	Topic	Agenda	Notes
9:00 - 9:10	10 min	Set-up room			
9:10 - 10:20	70 min	ST-WS 1 Hands-on session	From kit to autonomous robot - Working with STEVAL-ROBKIT1	Platform introduction <ul style="list-style-type: none"> Hardware tour: sensors, motors, control board, connectivity Overview of the provided firmware and software ecosystem Programming ecosystem <ul style="list-style-type: none"> Using STM32CubeMX, STM32CubeIDE, STM32Cube.AI, ... Project structure, configuration, and build process Hands-on experience <ul style="list-style-type: none"> Guided exercises: Robot Control, Motor Control, Sensing & Vision use cases (for participants who followed "Required preparation") Guided demo: Surface Detection with STM32Cube.AI+ 	REMARK – Hands-on session requires preparation !!! See "Pre-requisites Documentation Support"
10:20 - 10:30	10 min	Break	Reset room and ROBKITs		
10:30 - 11:15	45 min	ST-WS 2 Impulse presentation	From Hype to Reality: Physical AI and Humanoid robotics today	The Foundations of Physical AI: A system view on robots and drones <ul style="list-style-type: none"> Multimodal perception incl. MEMS, imaging, Time-of-Flight, AI Deterministic control with edge AI, real-time control, distributed intelligence High-efficiency actuation and power management ST solutions and concrete application examples <ul style="list-style-type: none"> Vision - Decision - Action with the Robotic Hand platform Robotic Joint module as a scalable building block for arms and humanoids Multimodal sensing and imaging for drones (navigation, obstacle detection) 	
11:15 - 11:25	10 min	Break	Reset room and ROBKITs		
11:25 - 12:10	45 min	ST-WS 3 Impulse presentation	From Hype to Reality: Physical AI and Humanoid robotics today	Repeat of ST-WS 2	
12:10 - 12:20	10 min	Break	Reset room and ROBKITs		
12:20 - 1:30	70 min	ST-WS 4 Hands-on session	From kit to autonomous robot - Working with STEVAL-ROBKIT1	Repeat of ST-WS 1 REMARK – Hands-on session requires preparation !!! See "Pre-requisites Documentation Support"	
1:30		End			

Required preparation for Hands-on Session participation






Pre-requisites

Required Software to be downloaded and installed* (*Recommendation at least 1 week prior to workshop*)

1. STM32CubeIDE
(<https://www.st.com/en/development-tools/stm32cubeide.html>)
2. STM32CubeMX
(<https://www.st.com/en/development-tools/stm32cubemx.html>)
*Note: The STSW-ROBKIT1 is not supported by STM32CubeMX v6.15.0. Kindly use **STM32CubeMX v6.14.1** for development.*
3. STM32CubeProgrammer
(<https://www.st.com/en/development-tools/stm32cubeprog.html>)
4. STM32Cube.AI / X-CUBE-AI v10.0
(<https://stm32ai.st.com/stm32-cube-ai>)
5. Also supported for IAR, Keil IDEs
6. **STSW-ROBKIT1 SDK Downloaded**
(for workshop STSW-ROBKIT1 v2.1.0 to be used)
7. GIMP
[GIMP - Downloads](#)

Additional requirements / pre-requisites

1. STLINK-V3PWR [provided by ST on-site May 8th]
 - 14 pin programming cable
 - USB C type cable for ST-Link
2. STEVAL-ROBKIT1 for participants use during WS, incl: [provided by ST on-site May 8th]
 - Pre-assembled
 - 4 x 1.5v AA Alkaline Batteries for each kit
3. WiFi connection at the venue
[provided by event on-site May 8th]
4. Mobile phone to install the STRobotics App
 - Apple  App Store for iPhone 
(<https://apps.apple.com/us/app/st-robotics/id6739212512>)
 - Android 
(https://play.google.com/store/apps/details?id=com.st.robotics&pcampaignid=web_share)



Documentation and Support (1/2)

STEVAL-ROBKIT1 | Product - STMicroelectronics

The screenshot shows the product page for the STEVAL-ROBKIT1. The page title is "STEVAL-ROBKIT1 | Product - STMicroelectronics". The breadcrumb navigation is "Evaluation tools > Solution evaluation tools > Sensing > STEVAL-ROBKIT1 >". The main heading is "STEVAL-ROBKIT1 ACTIVE" with a "Save to my ST" button. Below this is the sub-heading "Evaluation kit for Robotics applications". There are two buttons: "Download databrief" and "Order Direct". The navigation tabs include "Overview", "Sample & Buy", "Documentation" (which is active), "CAD Resources", "Tools & Software", and "Quality & Reliability". Under "Quick links", there are links for "Product Specifications", "Presentations", "Technical Notes & Articles", "Product Certifications", "User Manuals", and "Evaluation Board Terms of Use". A search bar is present with the text "Search documents by title" and a "Reset" button. Below the search bar are dropdown menus for "Select File Type" (set to "File Type") and "Select Date" (set to "Latest update"). At the bottom, it says "All resources".

The cover of the user manual for the STSW-ROBKIT1 Robotics evaluation kit. It features the ST logo and the reference number UM3456. The title is "Getting started with STSW-ROBKIT1 for STEVAL-ROBKIT1 Robotics evaluation kit". The word "Introduction" is visible at the bottom of the cover.

[Getting started with STSW-ROBKIT1 for STEVAL-ROBKIT1 Robotics evaluation kit - User manual](#)

The cover of the user manual for the STEVAL-ROBKIT1 evaluation kit. It features the ST logo and the reference number UM3457. The title is "Getting started with STEVAL-ROBKIT1". The word "Introduction" is visible at the bottom of the cover.

[Getting started with STEVAL-ROBKIT1 - User manual](#)



[steval-robkit1-evaluation-kit-for-robotics-applications.pdf](#)

Documentation and Support (2/2)

Support Home - STMicroelectronics

https://www.st.com/content/st_com/en/support/support-home.html

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Welcome to the ST Community!

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Community activity

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by fabr - Associate 47 2 0
STPD01 and its I2C addresses
2020-04-03 10:09 AM | Posted in Power management

by Boris_L - Associate II 284 9 0
A power board to the STM32 NUCLEO-64 401RE board to control two 3-phase BLDC motors?
2020-02-03 9:40 PM | Posted in STM32 MCUs Motor control

Ready to get started? Here are some useful resources to help you find your way around the community and feel comfortable using this website. Welcome to the Community!

Our technology starts with You

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