

2024 Mechatronics HK Grand Finale!

Monday 9 December, kl.13-17

Come and find out what our Teams have been focusing on since March

- » DeLaval's Cream Team - *how to visualize the invisible and map the unseen*
- » HRI AKI - *how to make everyday human expressions seem natural in a robot*
- » SaabMarine - *how to use waypoints to explore the depths with a remote control underwater vehicle*
- » Scania PalleTron - *how to revolutionise delivery logistics for dense urban areas*

All are welcome!

kl.13 in M3

Listen to short presentations from each Team.

Join us live or via Zoom!

kl.14-17 in LabHallen
Brinellvägen 83

Visit the students and their prototypes at the Demo Sessions.

Curious about antenna testing for cow identification? Watch our cable robot create 3D maps of detection fields!



Brinellvägen 83
December 9th

Presentations
13:00-14:00
Demonstration
14:00-18:00

DeLaval -Mechatronics HK 2024-

MECHATRONICS UNIT
ROBOT DESIGN
LABORATORY

COME WATCH
AKI
PUT MOTION TO ITS EMOTIONS!



9 DECEMBER
PRESENTATION: 13-14 IN M3
DEMO: FROM 14.15 AT BRINELLVÄGEN 83

Supported by:
Mechatronics HK project 2024
HRI


SAABmarine

NAVIGATING THE DEPTHS
MODEL PREDICTIVE CONTROL OF AN UNDERWATER VEHICLE

DECEMBER 9
PRESENTATION & OPEN DEMO

Location	M3, KTH	BRINELLEV. 83
Time	13.00 - 14.00	14.15 - 18.00

LATEST NEWS
SAABMARINE FINDS
MALAYSIA AIRLINES
FLIGHT 370



KTH

PALLETRON

Revolutionizing Autonomous Urban Deliveries



SCANIA
Integrated Transport Research Lab
KTH

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DeLaval

Mechatronics HK 2024

Field Mapping Rig for Dairy Industry Antennas with DeLaval Visualizing the invisible!

In modern dairy farming, individual cow monitoring is critical for efficiency and health. At the heart of this process is the **In Place Reader (IPR)**, which detects a cow's presence via a small tag. However, testing the detection field of the IPR has been a manual and imprecise process—until now.

Our solution? A cutting-edge cable robot that moves the tag systematically around the IPR. This innovative design enables us to generate a detailed point cloud that visualizes the antenna's signal field, revealing exactly where the tag is detected and where it isn't.

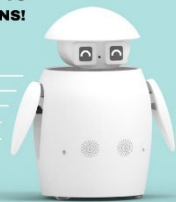
Want to see how we map the unseen? Visit our demo and check out the rig in action!

Putting Emotions into Motion!

Drawing inspiration from HARU by Honda Research Institute, its sibling AKI is set to debut on Monday, December 9 2024.

AKI is a social tabletop robot crafted to foster new memories, fun interactions, and meaningful connections with children. Everyday expressions of interaction and emotion are things we often take for granted, but recreating these human traits in a robot is no walk in the park!

But we aim to make your day special with an interaction from a truly 'living' robot. The robot will showcase a variety of meaningful gestures, creating a lively and engaging experience by connecting its motions to its emotions.



MECHATRONICS UNIT
ROBOT DESIGN

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Dive Into Innovation with our MPC controlled BlueROV2!

Discover our BlueROV2, an underwater vehicle equipped with advanced control and sensing capabilities. At the core of our project is the implementation of Model Predictive Control (MPC), an advanced algorithm that predicts and optimizes the robot's movements in real time. MPC allows the robot to navigate complex underwater environments.

Experience this firsthand in our interactive Unity-based simulation, where you can input your own waypoints and watch as the robot dynamically computes and follow the reference waypoints. In addition to the simulation, explore other innovative features of the project, including a custom-built locator beacon dropper and the robot's onboard camera, which uses computer vision to enhance images and create 3D models of objects it observes.

This is also your chance to meet our team of nine dedicated members who worked together to bring this project to life. We'll be available to discuss the technical challenges we faced, share insights about the development process, and answer any questions you have about the BlueROV2, our simulation, or the technologies we implemented. Whether you're curious about underwater robotics, MPC or how teamwork drives innovation, we're excited to connect with you!!



SAABmarine

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LATEST NEWS
MULTIMEDIA
FLIGHT 370



KTH

Experience the Future of Urban Delivery - Test Drive the Autonomous PalleTron

We invite you to witness and interact with PalleTron—an innovative autonomous pallet lifter designed to revolutionize last-meter delivery in dense urban environments. Capable of handling heavy goods up to 200 kg on standard EU pallets, PalleTron addresses the challenges of delivering to city businesses like restaurants and shops without human intervention.

What You'll Experience:

- **Interactive Test Drives:** Get hands-on and test drive PalleTron, experiencing its intuitive operation firsthand.
- **Demonstrations:** Watch it autonomously navigate urban settings, showcasing efficient and safe delivery right to the doorstep.
- **Insights into Innovation:** Learn about the cutting-edge technology powering PalleTron, including its navigation and load-handling capabilities.

Join us to explore how PalleTron is transforming urban logistics by making deliveries faster, safer, and more efficient. Be among the first to experience this leap forward in autonomous solutions at the Grand Finale Demo!



PALLETRON

Revolutionizing Autonomous
Urban Deliveries

SCANIA

Integrated Transport
Research Lab

KTH