Meet the Robots

engage • experience • inspire

14 April 2023

The Alan Turing Institute

EDINBURGH CENTRE FOR ROBOTICS

THE UNIVERSITY OF EDINBURGH

Informatics Forum, University of Edinburgh
10 Crichton St, Newington,
Edinburgh EH8 9AB

Statistical Machine Learning
and Motor Control
(SLMC) Group

INTRODUCTION OF OUR TEAM

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Atoosa Kasirzadeh
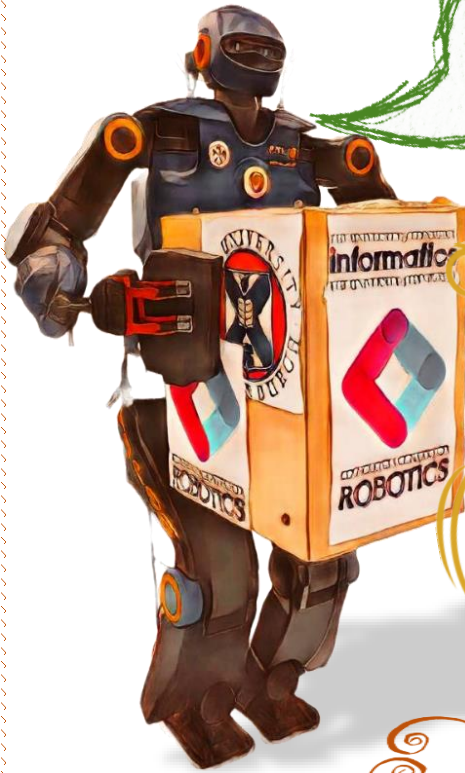
Ran Long

Thomas Corberes

TALOS: The Ultimate Companion for Science and Discovery

I'm Talos, the walking scientist! I can do research in Artificial Intelligence, Human-Robot Interaction, and Navigation. Who knows what discoveries I'll make!

I'm built to lift heavy objects and perform advanced manipulation tasks. With my advanced technology, I can even communicate with other robots and devices via network.

Saeid Samadi

Jiayi Wang

TALOS Technical Features

· **Dynamic:** 32 degrees of freedom
· **Powerful:** 6 kg payload per arm
· **Intuitive:** Torque-controlled joints
· **Adaptable:** Customizable head and gripper
· **Efficient:** 1.5h walking/3h stand-by battery
· **Safe:** Safe interaction with environment

Exo-H3: Future of Assistive Technology

My name is EXO-H3, and I am here to support you. I can help you stand up and I can help you sit down. I can help you take a step and when you no longer need me, I can walk away.

I am a lightweight robot, and I have a soft cushion to make you comfortable. I will not hurt you. I can even get taller or shorter. You can put me on at any time, and we can go for a walk. To infinity and beyond.

Andreas Christou

Ruaridh Williams

Sandor Felber

Exo-Skeleton Technical Features

- **Joints:** 6 actuated degrees of freedom (hips, knees and ankles)
- **Power:** 40Nm per joint; Max user's weight: 100kg
- **Weight:** 17kg with the battery
- **Dimensions:** User's height 110-210cm
- **Safe:** Safe interaction with humans

EVA: The Nextage Companion for the Smart Factory of the Future

I am EVA, a Nextage robot on a mobile base, ready to move to the smart factory of the future and work alongside my human friends.

I'm good for moving around and moving objects with my two arms. I also have two big eyes to look carefully at everything I do!

Joao Moura

Juan Ferrandis

EVA Technical Features

· **Dynamics :** 18 degrees of freedom
· **Vision :** 2 cameras in stereo pair
· **Precision :** position-controlled joints
· **Payload :** 1.5 Kg per arm
· **Sensing :** measures interaction forces at the tips of the arms

Dual-Arm Robot with Haptic Device: The Ultimate Precision Machine

Unleash your inner robot and explore remote environments by experiencing the power of Human-Robot Cooperation and discover the power of Tele-operation

I can offer you unparalleled precision and dexterity with this cutting-edge technology while ensuring a safe work environment.

Keyhan Kouhkiloui

Mohammad Kasaei

Dual-Arm Technical Features

Robot-arm:
- **Dynamic:** 7 joints per arm
- **Intuitive:** Torque -controlled joints
- **Safe:** Safe interaction environment
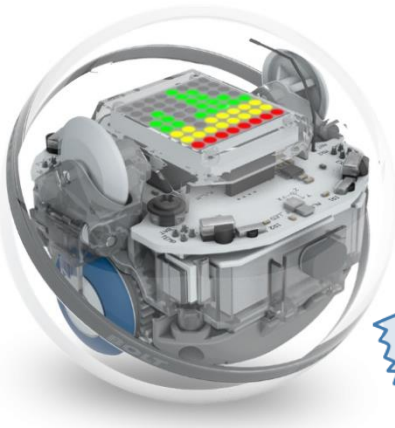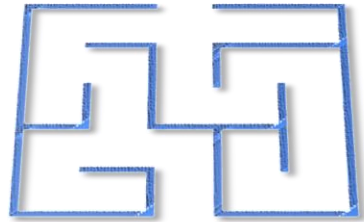- **Powerful: 3 kg per arm**

Haptic device:
- **Dynamic:** 6 joints per device

Race the Maze: Sphero, the Robotic ball!

Sphero is a unique robot in the shape of a ball.

It is an 'Edutainment' robot – used for teaching kids to code as well as create new kinds of interactive games that can be programmed from scratch.

Race the Maze!

Use an iPad interface to control your Sphero and race against an opponent to cross the maze first.
Good Luck!

Deepti Vijayakumar

Sphero Technical Features

· **Many Programmable Sensors**
compass, light sensor, gyroscope, accelerometer, motor encoders.
· **Infrared Communication**
· **Inductive Charging**
· **Rich Programming Interface**
Use python or Scratch to program.
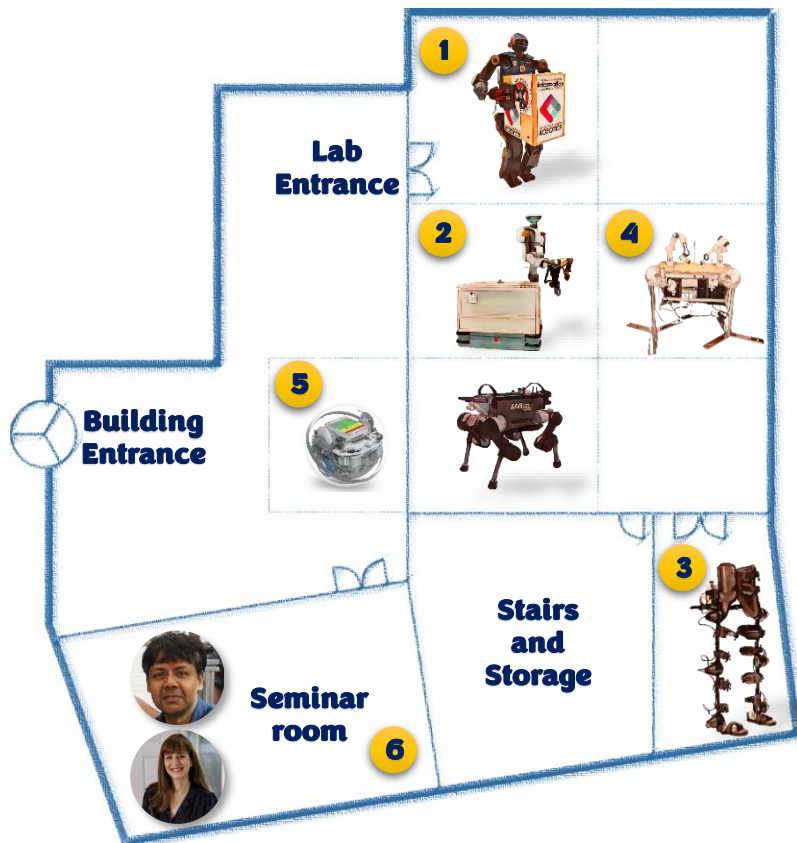
AI and Robot Ethics Q&A

Join us for an exciting Q&A session with Professor Vijayakumar and Dr. Kasirzadeh, where we will discuss emerging issues related to AI and Robotics. They will be available for the **last 10 minutes** of each session to answer questions and engage with the audience in a lively discussion.

Location: Seminar Room