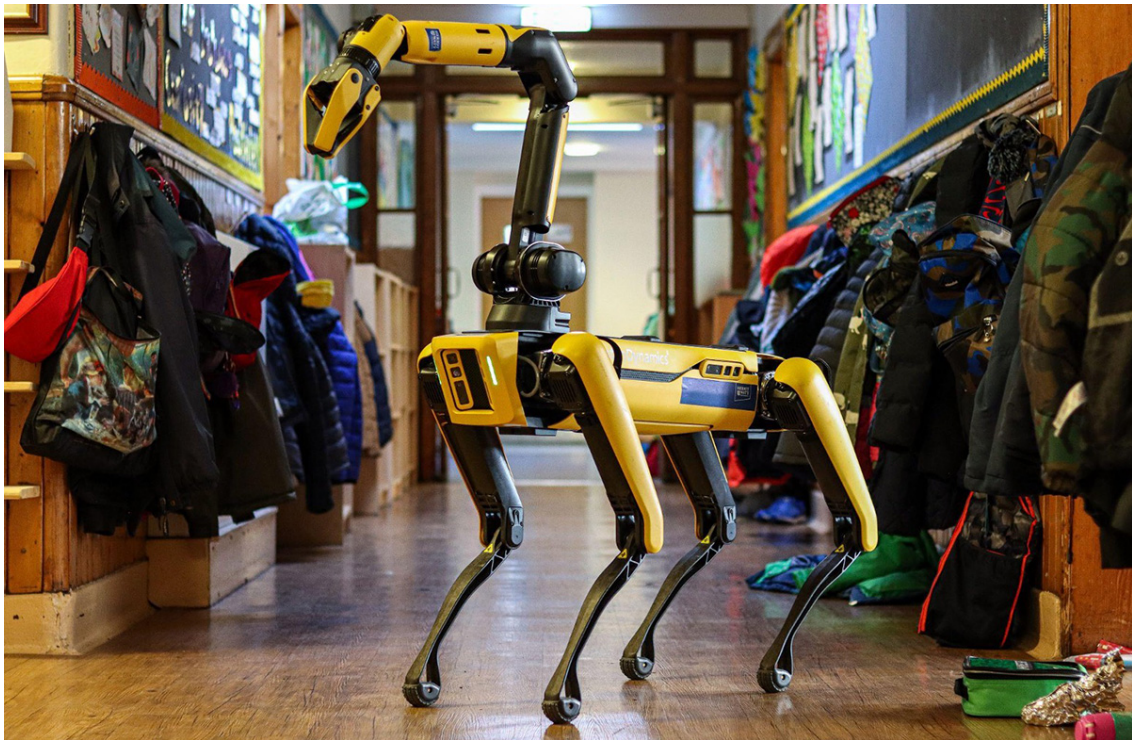


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THE NATIONAL
ROBOTARIUM
PEOPLE CENTRED :: INTELLIGENCE DRIVEN

SPOTLIGHT ON :: NATIONAL ROBOTARIUM LAUNCHES ITS FIRST PUBLIC OUTREACH PROGRAMME



Our newly named M.A.R.T.I.N.A. visits local schools

The National Robotarium launched its public outreach programme earlier this month, inspiring and educating young people about robotics and AI across Scotland.

With the aim to drive engagement and broaden access to cutting-edge technology, the programme will build future skills and encourage more young people from a wider range of backgrounds to consider starting a robotics career.

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the future. More than 1,000 primary school pupils from 39 schools based in the Lothians and Fife took part.

The name 'M.A.R.T.I.N.' was crowned the winner. The acronym stands for Mechanical, Artificial, Remote, Technological, Intelligent, Ninja. The second 'Spot' robot has been aptly named 'M.A.R.T.I.N.A.', with the final 'A' acknowledging its robot arm.

The winner was chosen by guest judge and BBC science journalist and broadcaster Vivienne Parry because of its ability to inspire discussions surrounding the fundamentals of robotics.

M.A.R.T.I.N. and MA.R.T.I.N.A. toured the winning schools with an academic team from the National Robotarium.

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NEWS ROUND UP



Professor Yvan Petillot, co-academic lead of the National Robotarium and ORCA Hub director, spoke at the Robotics and Automation Conference 2021. Professor Petillot outlined the role the National Robotarium plays in bridging the gap between academia and industry, offering an open door for industry to bring challenges to the research centre and work collaboratively.

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joined the **Birmingham Highways UK Exhibition**. Newly named M.A.R.T.I.N. from Boston Dynamics was presented to demonstrate how it could support the safe inspection and maintenance of highways in the future.

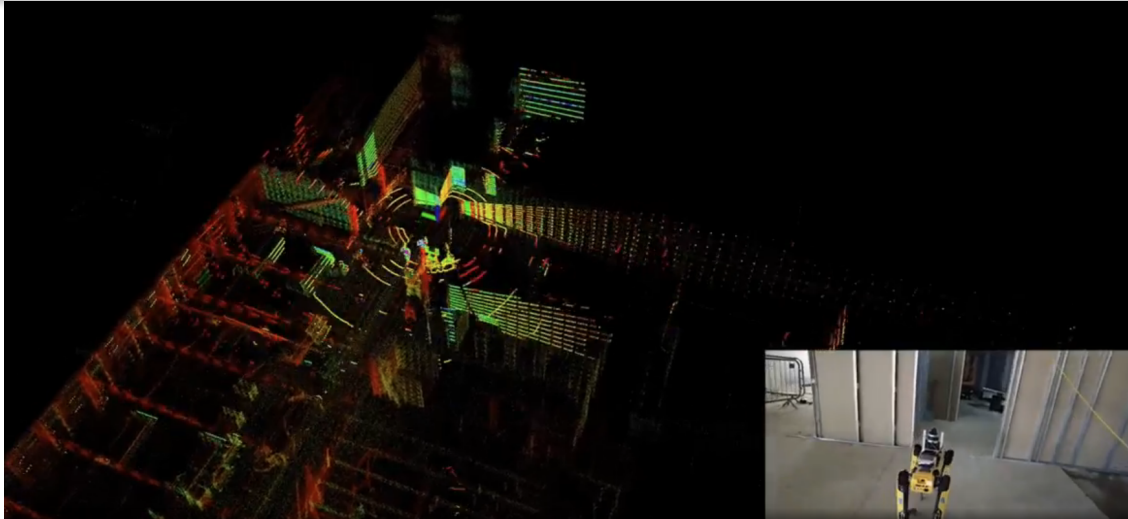
WATCH M.A.R.T.I.N. IN ACTION



Stewart Miller, CEO, The National Robotarium

Our CEO Stewart Miller was interviewed by **The Scotsman** about how robotics will help people in the future. Stewart also explained how the strong research base and expertise of the two world-leading universities that lead the National Robotarium will help to forge global collaborations.

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M.A.R.T.I.N. mapping the construction site

Our groundbreaking project with the ORCA Hub allows us to use M.A.R.T.I.N. to support the construction industry. Testing the technique on our own construction site with Robertson Group, M.A.R.T.I.N. is able to create a map of its surroundings while spotting obstacles like debris. This gives industry the potential to speed up the construction process, reduce rework costs, detect hazards, increase efficiency and improve quality control.

WATCH M.A.R.T.I.N. IN ACTION

MSc students studying Conversational AI were nominated for the best paper award at the 2021 International Conference on Multimodal Interaction (ICMI). Read their paper, 'Combining visual, social, and task-oriented conversational AI in a healthcare setting' in full.

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Join the ORCA Hub on 7th December as it co-hosts a comprehensive virtual panel on offshore energy with Net Zero Technology Centre and Offshore Renewable Energy (ORE) Catapult. Experts will discuss a range of topics, from what challenges lie in wait for robotics to how oil and gas can transition into clean energy.

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TRAINING :: Student Spotlight

Karolina Judzentyte,
4th year student in Robotics, Autonomous, and Interactive Systems Engineering

What does your research entail?

At present, buildings are designed mainly for humans, with stairs, ramps, and doors. This makes indoor navigation impossible for wheeled or tracked robots. This is where our robot 'dogs' offer unique advantages: They have legs. My work consists of using one of our 'SPOT' robots from Boston Dynamics to fully autonomously map and navigate its environment. Recently named M.A.R.T.I.N. by school children in Edinburgh, the goal is to integrate navigation with voice recognition and deploy M.A.R.T.I.N. to guide guests around the new National Robotarium building which is currently under construction. To achieve this I am taking advantage of the multiple cameras and a laser scanner (called lidar) which is mounted on our robot to detect and avoid obstacles whilst simultaneously mapping its environment as it does so.

How do you expect your research will impact society?

I expect that my work will create a basis for autonomous navigation using 'SPOT' robots which, in turn, can be implemented to further the robot's capabilities. For example, the robot could be deployed in hazardous environments - such as burning buildings or radioactive environments - to scout the area, reducing the need for humans to be put in harm's way. Another example could be to use its navigation capabilities in combination with humans to lighten the workload. The robot could perform inspection tasks at various remote or hazardous locations such as on offshore platforms to take meter readings or on construction sites to document progress and search for potential errors.

What's the biggest challenge you face in your research?

Robotics consists of two major components: software and hardware. Both components have unique challenges which can become particularly troublesome when the two elements are closely interlinked. Testing and debugging can be very time-consuming. Both components are capable of limiting the other, so testing requires constant maintenance or strategy adjustment.

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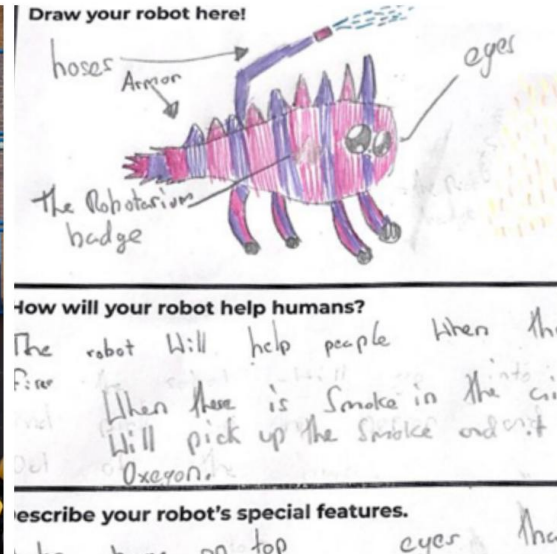
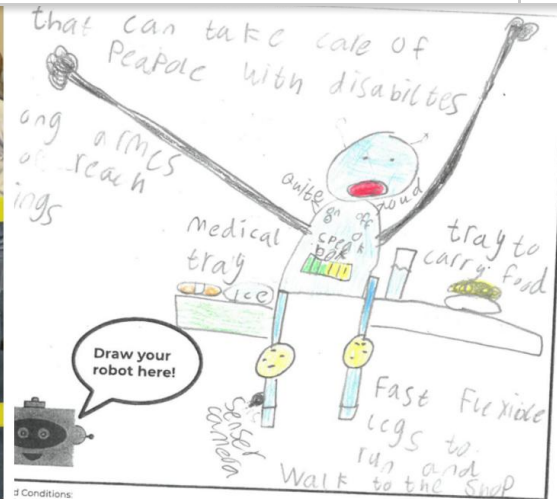
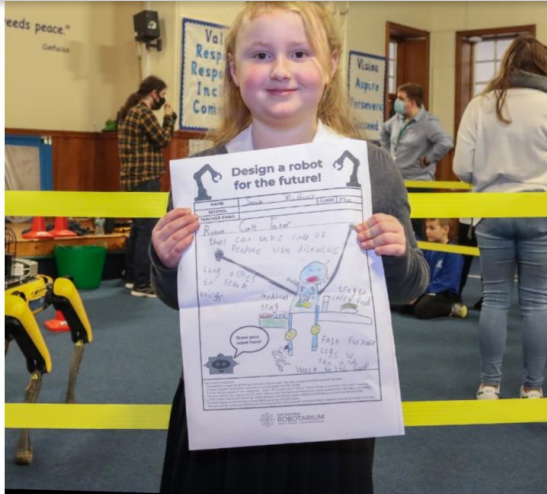
and can move up and down stairs, meaning there is a risk of it falling. Therefore, it requires constant testing in different environments and scenarios to ensure a high level of safety.

How did you become interested in robotics?

I have always been very interested in problem-solving. There is something about figuring out problems and producing strategies to solve them that is very immersive to me. Problem-solving in robotics goes beyond the problems found in hardware and software. It is also about exploring how robots can help make people's lives better, and how to create useful robots. It requires creativity and innovation and, most importantly, robotics has such huge potential to impact society in a meaningful and positive way. I believe there will always be new and interesting problems for me to solve in robotics.

Bitesize

■ ■ ■ ■



Sophie (top left) with her 'Robot Care Taker', Cole (bottom left) with his 'Fire Bot'

Our robots inspired school children during an outreach trip!

Launching our new public engagement programme, M.A.R.T.I.N. and M.A.R.T.I.N.A. made their first visit to schools to celebrate the winners of the robot naming and design competition.

If you know a young person interested in robots, they can learn more about our work on CBBC's Newsround!

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YOUR CHANCE TO GET INVOLVED

If your organisation or school would like to get involved in the work of the National Robotarium, whether to tackle an industry problem or engage young people in robotics research, we'd love to help!

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SPREADING THE WORD

We have started posting on our social channels. If you are able to support our engagement and grow our following, please visit @NRobotarium on Twitter or @The National Robotarium on LinkedIn and tag us in relevant news and content.



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