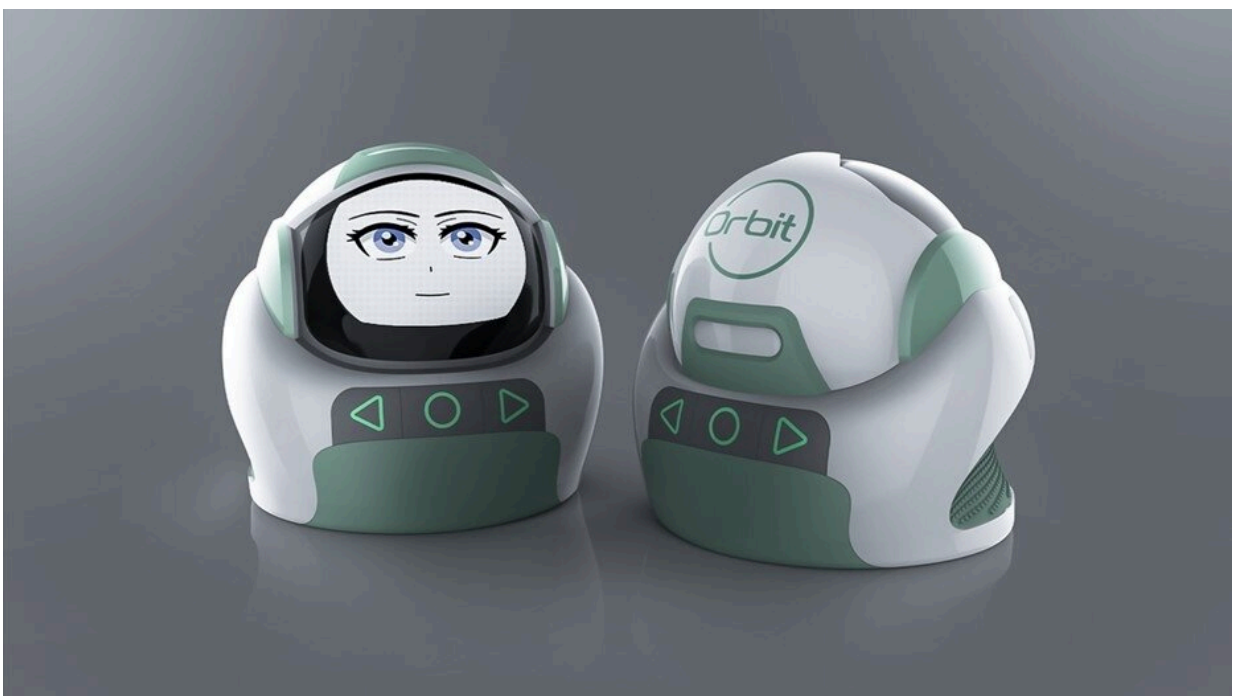


# Meet Orbit, the interactive robot that looks to help children with autism spectrum disorders develop social skills

September 23 2022, by Meg Cox

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Orbit. Credit: Loughborough University

"Hey there. Allow me to introduce you to your new companion, Orbit, a robot you can play with and listen to. Not only can Orbit hear you, they can feel you too."

The hand-sized robot smiles and encourages users to press a button on its back, reacting with a beaming smile if pressed gently, and with a sad face if the interaction is too hard.

"Oh no, it looks like you pressed too hard, Orbit is sad and in need of cheering up, try tickling their belly and see if that will work."

Orbit is an interactive robot that aims to teach children with [autism spectrum disorders](#) (ASD) about emotions and social appropriateness through storytelling, physical interaction, and visual communication.

It's the work of recent Product Design and Technology graduate Ben Powell, who has first-hand experience of how difficult and scary it can be for [young children](#) with ASD to socialize having been diagnosed with mild high functioning autism himself.

"A common difficulty for children with ASD is that sometimes they struggle to socialize with others due to emotional recognition issues; they're sometimes unable to detect what people are feeling from what they are saying, and I struggled with that," Ben explained, "I wanted to create something that will help."

There are several existing interventions led by speech and language therapists that aim to teach children with ASD emotional recognition and robots with such capabilities are being developed for schools, but they can be expensive.

Inspired by his own experiences and identifying a gap in the market, Ben created Orbit as part of his final year project to allow children with ASD to see emotions in context and develop their [social skills](#) independently.

The space-inspired robot tells stories and displays emotions on its "face" that correspond with what is being said; it encourages the user to touch

and engage with the robot, reacting to behavior that is socially unacceptable with verbal and visual cues.

"The primary function of Orbit is the storytelling," Ben said, "Storytelling is useful, but often a narrator tells the story, and this can be an issue for children with ASD as they must rely on vocal cues to decode emotion.

"Orbit actually expresses the emotion of stories by changing its facial expressions."

He continued: "The secondary function is encouraging verbal and visual interaction with Orbit. By giving Orbit a personality, children can build a connection with the robot and then empathize with it.

"This will teach the user social appropriateness and help them recognize how their actions may make the robot feel—i.e., if they press Orbit too hard or hit it, the robot will look sad or scared."

Ben has created a functional Orbit prototype and it includes technology such as [voice recognition](#), a touch sensor on the front, and a force-sensitive resistor on the back.

He hopes to build on his work in the future to "really help children with ASD and improve their confidence and social skills."

"Ultimately, I hope this product will get children talking," Ben explained, "Children with autism can struggle speaking to each other and decoding emotion, hopefully talking to the [robot](#) will build confidence, and then eventually [children](#) will feel confident to talk to others and build friendships."

**More information:** More information on Orbit can be found on the

[dedicated Design Degree Show webpage](#) and potential collaborators can reach out to Ben at [benwpowell1@gmail.com](mailto:benwpowell1@gmail.com).

Provided by Loughborough University

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