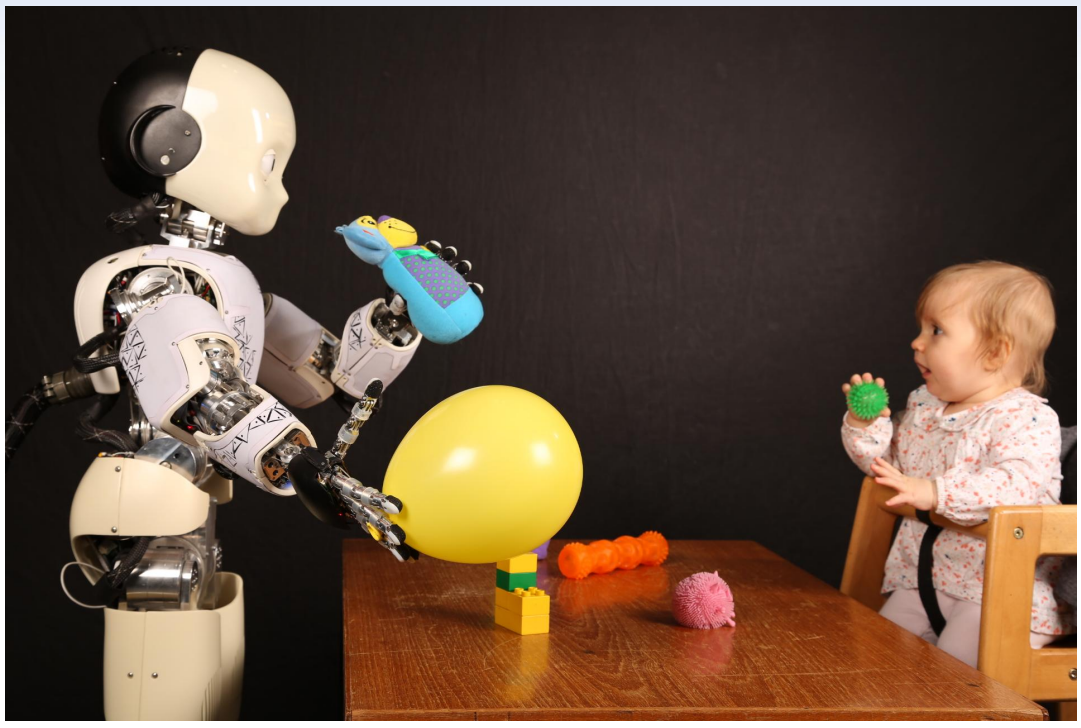
Modelling how children learn using robots

Introduction

During the early years of life, children learn rapidly how to control their body, and through playing they gain an understanding of the world they live in. They are very adaptable to change, and can apply their skills to novel situations.



iCub imitating how a child plays with their toys

Why is it important?

Robots are typically programmed for a single task, and have difficulty adapting to change. By modelling how children learn, we aim to develop a robot capable of learning new skills and adapting to change. With a detailed model, we can also gain a greater understanding of how children develop, and additional ways we can support their learning.

Changing visual acuity of robot/infant 0-10 months

How is it done?

We model the stages of infant development, the perceptual information and behaviours for learning new skills. Starting from an uncoordinated robot, iCub gradually learns how to look at, reach towards and interact with objects of interest. By playing with objects, the robot learns more about how they move and how they can be used.

What's next?

Social awareness and language play a key role in development, helping to guide the learning. Modelling these will be needed for robots to interact with people.

For more information and to see videos of iCub learning, please scan the QR code:

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