

Detecting Computational Thinking with smart sensor analytics

Project description

Tangible robotics are growing in popularity as a way to provide young children with experiences in child-friendly introductory programming and the development of computational thinking skills. These educational robots are typically programmed by children using large buttons or the arrangement of tangible programming blocks. Whilst their movements provide young learners with instant feedback about the success of their solution, it is more challenging for educators to monitor multiple students using robotic devices and to monitor their progress over time, as tangible robots do not collect data.

This project aims to investigate how sensor data, with RFID tags, could be collected and represented to provide meaningful information about how individual children interact with robotics, how they move spatially and algorithm sequences. Through collecting and representing this information we seek to investigate if the collection of sensor data can tell us information about the way children use robotics, their problem-solving process and the development of their computational thinking skills.



We have available a number of PhD projects within this space, working collaboratively with our research team to:

- understand learning processes and behaviours of children in school-age programming,
- develop data collection and analysis software to make sense of sensor data. .

Student attributes

- You might have an interest in educational robotics and the learning and teaching of introductory programming to young children.
- You might have an interest in exploring ways to harness sensor data to create solutions, and the visualisation of sensor data.

More Information

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