Beantable

Overview

Beantable is an augmented interactive table, which offers various educative and entertaining applications to children in the age range of 3 to 7 years old.

The purpose of Beantable is to support children’s development through the monitored use of the embedded applications in an unobtrusive manner. Beantable monitors the children’s interactions and extracts indications of the achieved maturity level and skills by taking into account:

- The way the child plays
- The selection of materials and game themes
- The way the child takes part into the activities

Target Domains

Beantable provides a set of motivating smart games that will attract the attention of children throughout the age range that is targeted by the system. To this end, each smart game is being adapted continuously in terms of the interaction modality, content and/or task difficulty to meet the recognized skills and abilities of the child.

At the same time, parents are able to get information about the development progress of their child, including performance statistics and general information of the child’s skills and abilities.

Furthermore, Beantable can act as a diagnostic tool that provides educators and child development experts with extensive data (extracted from the interaction history) that can be used for determining whether the child is meeting developmental milestones.
Description

The table, which has been custom made, is a wooden prototype designed and built in order to be robust and transferrable. The height of the Beantable is adjustable in order to fit children’s needs as they grow.

Beantable supports a number of alternative natural interaction techniques, integrating the following facilities:

- gestures recording, parameterization and recognition
- face tracking
- head position estimation
- skeleton tracking
- speech recognition

At the same time, a number of smart augmented artefacts have been implemented, including a force pressure sensitive multi-touch surface, a smart chair and a smart pen. Additionally, the table screen is able to recognize the location and the rotation of physical objects on the top.

The tracking infrastructure gathers data from sensors and games, providing indications about the achieved maturity level and skills of the child. Based on this feedback, the embedded games and applications are adapted in order to address the child’s needs and requirements as they evolve over time.

Additional Information