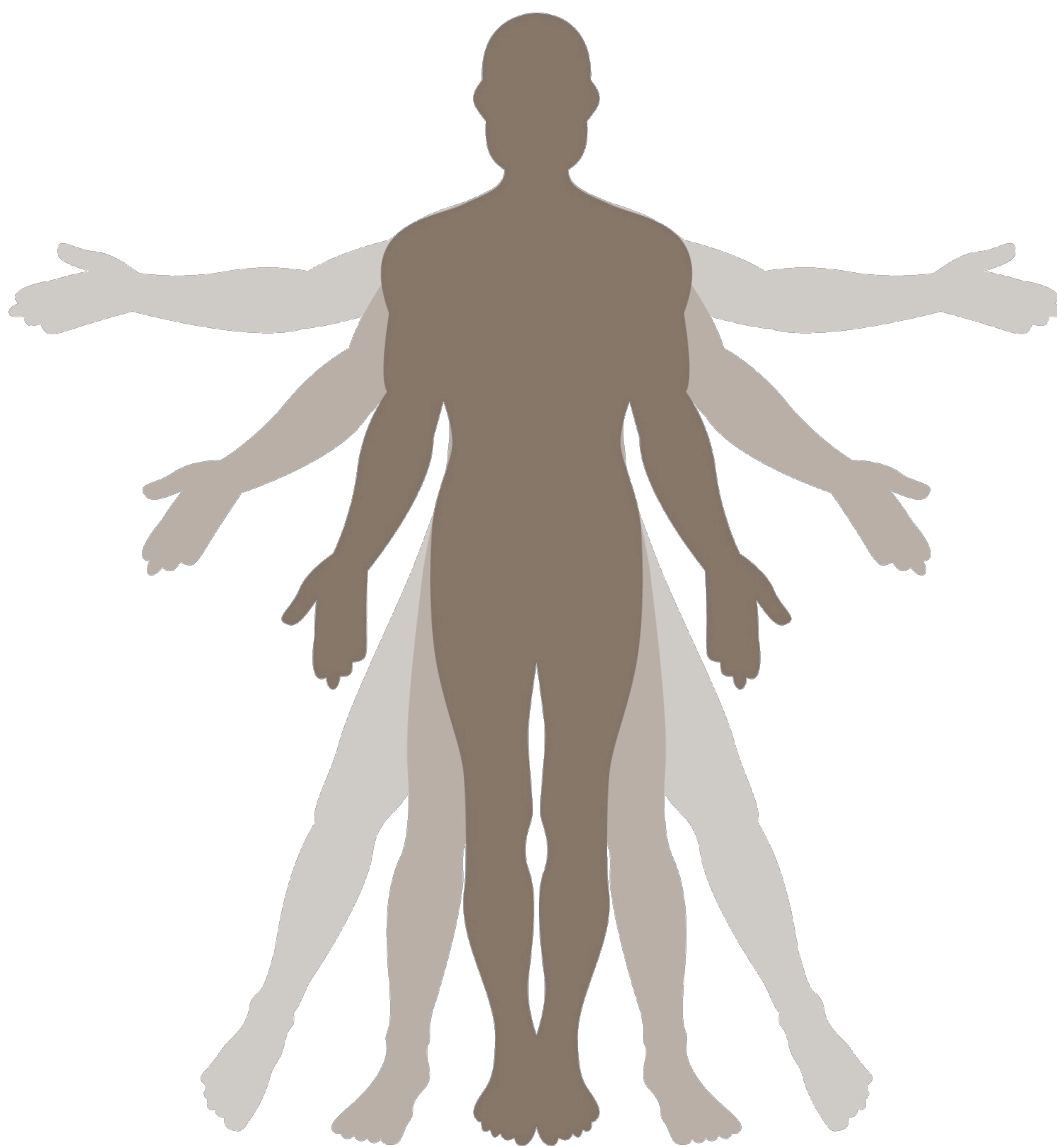


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Kinect2Scratch Workshop Content



Kinect2Scratch

Kinect2Scratch is an application that allows Scratch to utilise the Microsoft Kinect as visual input, the Scratch project can then be controlled using a person's motion. Scratch is a “drag and drop” programming environment, enabling you to learn the importance of aspects of programming without the difficulty of handling syntax errors or confusing code constructs. This includes learning about sequencing your commands and the importance of clear, concise instructions for the computer to interpret.

Scratch is a colourful, user-friendly, open-source (free) software. It is popular within ICT and Computing education. It incorporates not only the basics of Computer Science, Physics and Maths, but most importantly has a certain “fun factor” with the use of sound, imagery and the editing tools.

The benefit of the ‘drag-and-drop’ approach to programming is the lack of pressure to learn a programming language's syntax, Scratch provides just that. In addition, it also provides a friendly user-interface, attractive to both experienced users and beginners, as well as the range of assistance available to users varying from forums and help guides, to demo games, example code and helpful videos available on the Scratch webpage (www.scratch.mit.edu) and the Kinect2Scratch webpage (www.scratch.saorog.com).



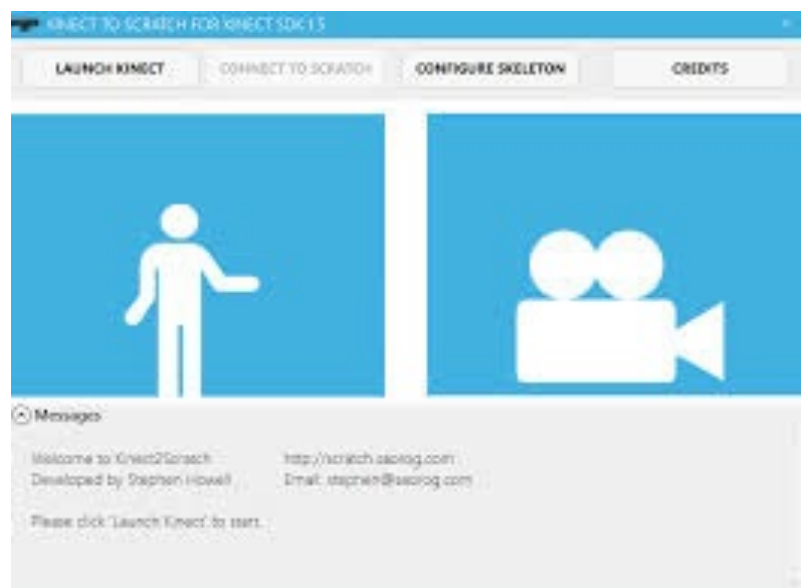
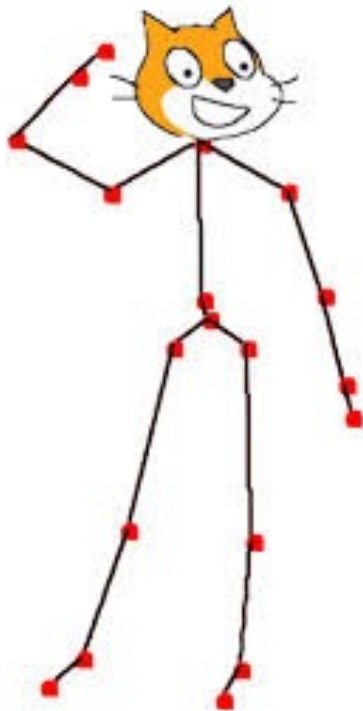
The Microsoft Kinect sensor is a horizontal piece of hardware that uses web-cam style technology to enable users to control and interact with the Xbox console, or in this case the Scratch interface on a computer. This motion controller can be implemented, replacing the need for a keyboard as user input or a mouse pointer.

Kinect2Scratch

To begin, we discuss with participants some of the basics of using the Scratch software, for instance highlighting which areas of the interface contain the code to be used, where they are dragged to and how to access some of the image editing tools. The “Sprite” (an object within a project) can be deleted, edited or even a new one can be imported or drawn from blank.

Blocks of code can be dragged into the main script, these can apply movement to your Sprite and lay out the rules to a project, expressing any conditional statements needed to create an event driven program.

The most important of the instruction categories is “Control”, all instructions should either begin with a Control code block or should be embedded within a Control statement such as the use of loops or conditionals.



Once the Microsoft Kinect SDK has been installed, the Kinect2Scratch application has been successfully launched and “remove sensor connections” has been enabled the required code blocks to implement interactions with the Kinect become available to use. These will offer a variety of fun, colourful coding opportunities to participants, programming in an active and playful environment. The participants will be building up code for a variety of small project incorporating different programming skills and different movements to be sensed by the Kinect.



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