

One-Man Space Orchestra

Description:

A stuffed creature with multiple detachable limbs, each holding a different kind of instrument, this device allows the user to detach and attach the limbs, among other things, in order to customize the beats of and the order in which the sound effects of the instruments are emitted when the device is activated. The device should not only produce the user experience of creating music, but also establish the creature as a character with distinct behavioral traits, which can be communicated by the twitches in the creature's movements and the mechanisms to "instruct" it.

Intended Behavior:

The attachment of each limb produces a different piece of music (illustrated by the claw holding the corresponding instrument) from the computer connected to the creature. After attaching the limb to the creature, the beats of the piece of music for each limb can be adjusted by the number of times the respective button connected to the limb has been pressed. The user can reset the beat of each piece of music for the limbs back to its default value (one per second) by detaching the limb.

Intense light (similar to a "spot light") causes it to be activated as well as the limbs to twitch in such a way that corresponds with the instrument it is holding and the beat it is "producing", whereas dimming the light will cause the Orchestra to stop playing. There will be a reset button to purge all user customization of the music pieces and return the creature to its initial setting.

Original Inspiration for the Project:

Musical Chairs: A cabin with two stage and five bears, each holding a different instrument that corresponds to a pre-determined musical piece (from "Come All Ye Faithful"). Adding the bear(s) to the performing stage causes their particular instrument(s) to be added to the music (re:

<http://www.mrchristmas.com/product.php?line=Gold&cat=7&product=573>;

<http://www.mrchristmas.com/video.php?vid=av/Gold-573.mov>
).

Similar Project:

BeatBearing Demo: A display that allows its user to create beats for different "instrument" based on the slot that the ball is in (re: <http://www.youtube.com/watch?v=wreP8FMupyM>).

Required Resources:

Technologies	Muscle Wires, to control the twitches of the creature's limbs
	Analogue Sensing (input), intense light to activate the creature
	Digital Sensing (input), to customize the beats of each music piece, and to detect whether the limb is attached
	Processing (output), to produce music from the computer connected to the creature according to the signals from the creature's Arduino (which, if I have time, can hidden be in the creature's belly)
Materials	Muscle Wires; the usual circuitry materials; Arduino; cotton (or some other insular, soft filler); fuzzy (or leather – regardless, the material must be soft) pieces of cloth (the “skin” of the creature)

TimeLine:

(Guiding principle: build circuit first, then build the creature around it)

- March 26 All un-mastered skills learned (processing, muscle wires); incomplete past projects completed
- March 31 All listed materials purchased/acquired; final design on the behavior of the creature
- April 7 Coding of a demo limb completed
- April 14 A “demo” limb, complete with a circuit and intended effects (twitching and producing music), built
- April 21 Limbs, as well as their circuits, are built; Sewing the body of the creature
- April 28 Limbs and the body attached; Adjusting muscle wires and circuits
- May 5 Functional OSO completed; First dry-run/“debut” of the creature