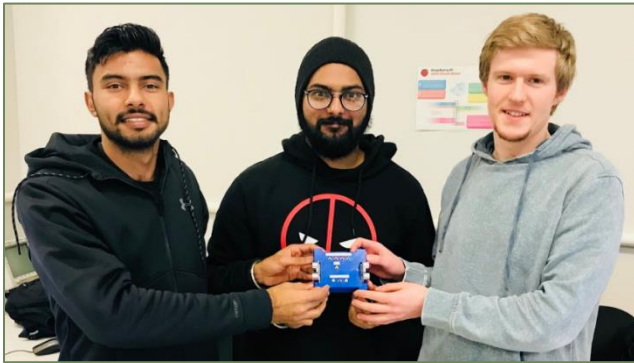


BIKRAMANZAC



About us

We are a group of third year students at Camuson College in the Electronics & Computer Engineering Technology program, and for our capstone project we created the Motion Synthesizer.

Our team wanted to create a device that everyone would enjoy. We came up with an idea to make a fun device for creating and playing music. The Motion Synthesizer allows the user to easily control different sound effects with their body movements.

Bikramanzac Team Members



Amandeep Singh

The project's hardware architect who created the system's interface and the enclosure.



Bikramjit Singh

The lead software developer who was in charge of designing the computer vision software.



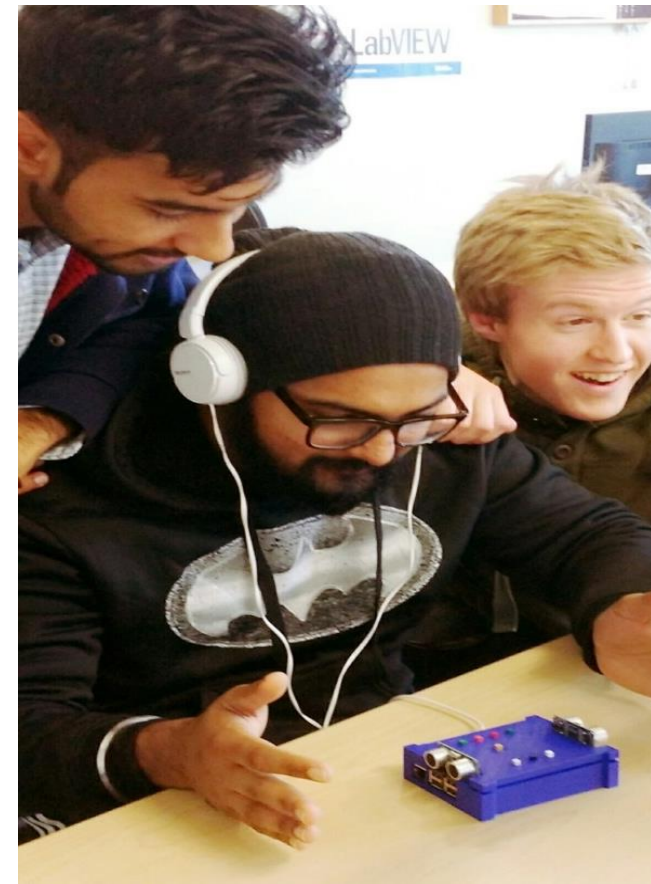
Zachary Legg

The project coordinator who was responsible for keeping the project organized and running smoothly.

Contact:

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Motion Synthesizer



Control Music With
Your Motion



FUNCTIONALITY

The Motion Synthesizer can be considered a toy for people of all ages. It has over 20 different sound effects to choose from, and it uses two types of sensors to transform the user's motion into music.

Ultrasonic sensors measure the distance from any object up to 50 cm away. A USB camera tracks colorful objects and body movements. The Motion Synthesizer offers a unique way for people to play and invent music.

Plug in any USB camera and HDMI monitor, and the Motion Synthesizer is ready to play.

FEATURES

You can control the pitch of different sound effects by waving your hands back and forth in front of the ultrasonic sensors.

The camera tracks different colored objects or body movements. You can watch on the screen how the Motion Synthesizer tracks your motion to control the sounds.

All the features included with the Motion Synthesizer can be accessed using the pushbuttons located on top of the device.



DETAILS

The Motion Synthesizer uses a Raspberry Pi HAT to interface with the ultrasonic sensors and pushbuttons.

The Motion Synthesizer is compatible with:

- HDMI screens.
- USB webcams.
- 3.5mm audio devices.

It was a lot of fun implementing the different motion tracking techniques that the Motion Synthesizer uses, and we worked hard to integrate the hardware and software in a way that would be intuitive for the user to use.

SPONSORS

This project was completely funded by Camosun College, and we thank them for providing us with a \$250 budget.