

CodeMiko: An Interactive Vtuber Experience

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Figure 1: Copyright to CodeMiko Project, LLC.

ABSTRACT

While VTubing has grown in popularity over the last few years, CodeMiko stands out by offering high fidelity motion and facial capture and a higher degree of interactivity due to Twitch chat's ability to affect her streams. CodeMiko has created a new form of entertainment inside of Twitch by mixing gaming, live interactivity, and traditional scripted content. New interactions are created all the time, making it an incredibly exciting experience for the viewers and makes them want to keep watching. To bring CodeMiko to life, all you need is motion capture through an Xsens suit and facial capture through an iPhone live link. Her fingers are captured using Manus VR. Most of her expressivity is done through her animation blueprint and I've added blendshapes with squash and stretch to make her face feel more alive. Heightened interactivity with chat is one of the most unique aspects of the CodeMiko show. When I connect to Twitch chat, tools that I created allow the viewers to play with the character morph screen, while others boast arcade-like

features. Chat can make her explode, throw balls and try to hit her, or make her fart. Chat can also visit Miko's world as a little frog, which Miko can then grab and throw around if she wants to. As an example, I have connected to chat and they will play with the character morphs live to change CodeMiko's body¹.

Another interesting technical aspect of CodeMiko is that Miko is a mixture of motion capture and pre-recorded game animations. I've blended both so that she can switch from a fully free range of real time motion to being able to walk and run like a third person game character. Chat can then come into her world and CodeMiko can shoot them as if it were a live video game! The blending with a game mode also allows me to create interactions and reactions to things happening in her environment caused by chat. For example, when chat throws a ball at her face and it hits her, she reacts in real time with an over-the-top, pre-recorded hit animation. This opens a whole new world where I can create miniature games with mocapped characters. I've created trivia levels, a dodgeball minigame, and can't wait to make a mocapped platformer.

Live-streaming on Twitch means long hours performing on a regular schedule almost every day of the week, but the audience always wants new and exciting content. I had to get very good at quickly evaluating the 3rd party content available from the Epic store and other 3rd party providers for its quality, ability to be quickly integrated into the stream, and ability to enhance Miko's world in general. This has led to all kinds of crazy new features being added like dragon eggs that need to be hatched by the audience or a car that Miko tries to drive. Miko also has an array of traditionally expensive content like entire new artfied scenes and full character costume replacements, which are all enabled by building an efficient pathway in for 3rd party content.

The interactivity that I've created for chat allows for them to become a part of each individual show, but also the content loop itself. Members of chat can use Twitch's built in monetization system to affect the stream in various ways. These interactions become clip-pable moments that viewers can then take joy in posting on social media, and oftentimes, clips from these streams will go viral. Viral clips bring in new viewers, who will then test interactivity features and create interesting moments, and these moments will go viral again. Since her debut on Twitch, CodeMiko has become more than just a streamer but an evolution of real time entertainment as we know it. This project has fully and successfully integrated a fast moving pipeline of both 3rd party and original content in order to appeal to the need for fresh content on a daily basis.

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¹<https://www.twitch.tv/codemiko/clip/LuckyAmorphousPotatoKappaPride-8w8bp9eolc5dZ7Vc>