FPGA Passport

6.111 Project: Abstract

Diana Wofk and Lorenzo Vigano

20 October 2016

Do your Facebook friends travel to cool places? Post images of themselves in Paris? Machu Picchu? Well now you can too! And you don't even have to leave the 6.111 lab! Much like a passport enables tourists to travel to foreign countries, the FPGA Passport photo booth application allows you to "visit" several pre-selected destinations and take "selfies" in front of famous landmarks.

The system will assume you are standing in front of a green screen. The FPGA will continuously take in data from a camera pointing at you and display the camera input on a monitor. At any moment, you will be able to press a "shutter" button to take a picture of what is currently being displayed on the monitor. Afterwards, the green screen background will be removed, and you will have the option to choose from a number of stored landmark backgrounds. Using chroma-keying, we will overlay your face on top of your chosen background. You will then have the option of adding text to the image. The composited image along with the optional text will be shown on the monitor. When you are satisfied with what you see, you will be able to press a "save" button that will send the image data to a PC in uncompressed bitmap format. You will then be able to view your "selfie" as a bitmap image on the PC, so that you, too, can brag about your travels to all of your friends.