CPSC 490 Project: *Generating Videos from Barcodes*

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May 3, 2017

Abstract

Imagine being able to scan a visual code on any object and see that object come to life. QR codes, for example, can be used to encode URLs for videos that can be watched over the Internet. However, this requires the video be stored on a remote server and the viewer to be connected to the Internet.

This project solves these two issues by generating the video directly from an image of the object itself that contains the visual code. The prototype involves encoding the videos into the visual code and using computer-vision techniques to process an image and animate its parts.

The main issue solved is how to encode a video into a visual code. The proposed solution is to encode just the animation of shapes in a photo taken of the object. This consists of two main parts — 1) encoding an animation of polygon outlines, and 2) processing an image to apply the animation to matching shapes.

The project deliverables consists of: 1) an animation tool for defining polygons and animation transitions (this generates the code), and 2) a series of image processing tools that convert a photo and a corresponding code into an animated video.