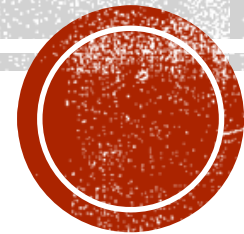
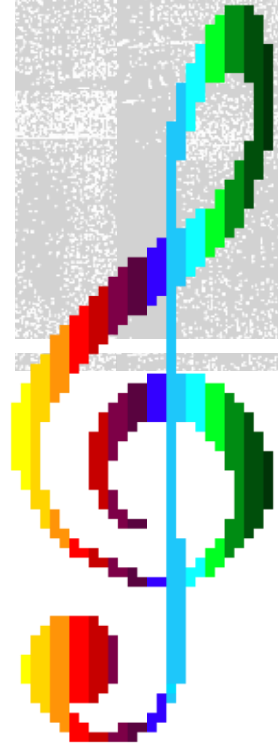


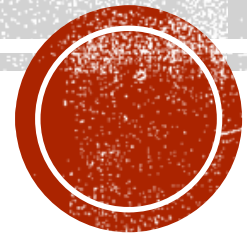
RGB MUSIC

ORAN GILBOA & ZEHAVIT LEIBOVICH



BASIC IDEA

Let the user “hear” an image
OR
Create music from an image



RELATED PAPER - VUZI

- **A painting graphic score interface for composing and control of sound generation**

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WHAT IS VUZYK?

Vuzik is an interface for creating and visualizing music through painting gestures on a large interactive surface

Motivation: open up new ways to create and realize musical ideas

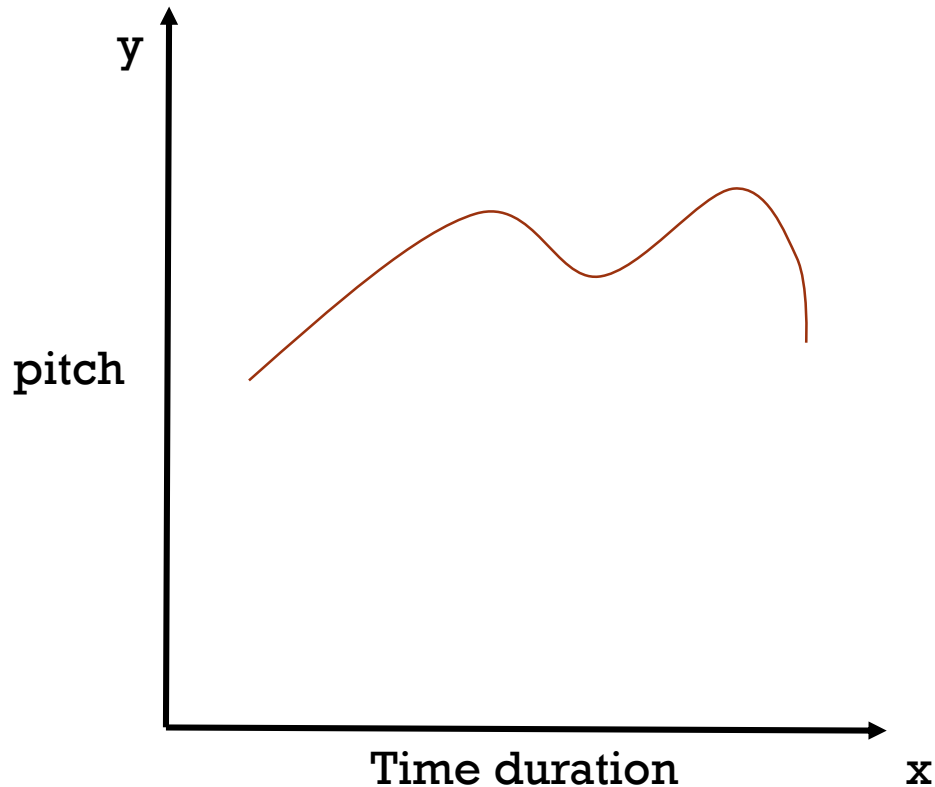
How?

Using the understanding of basic concepts about the physical world to build a usable understanding of music's structure and encourage more intuitive music exploration and creation

Video: <https://www.youtube.com/watch?v=Oq7c43mZYdY>



FIRST STEP- SOUND VISUAL MAPPING



- Each color is paired to a unique instrument tone
- Thickness of the line reflects the loudness



SECOND STEP — HEAR THE PAINTING

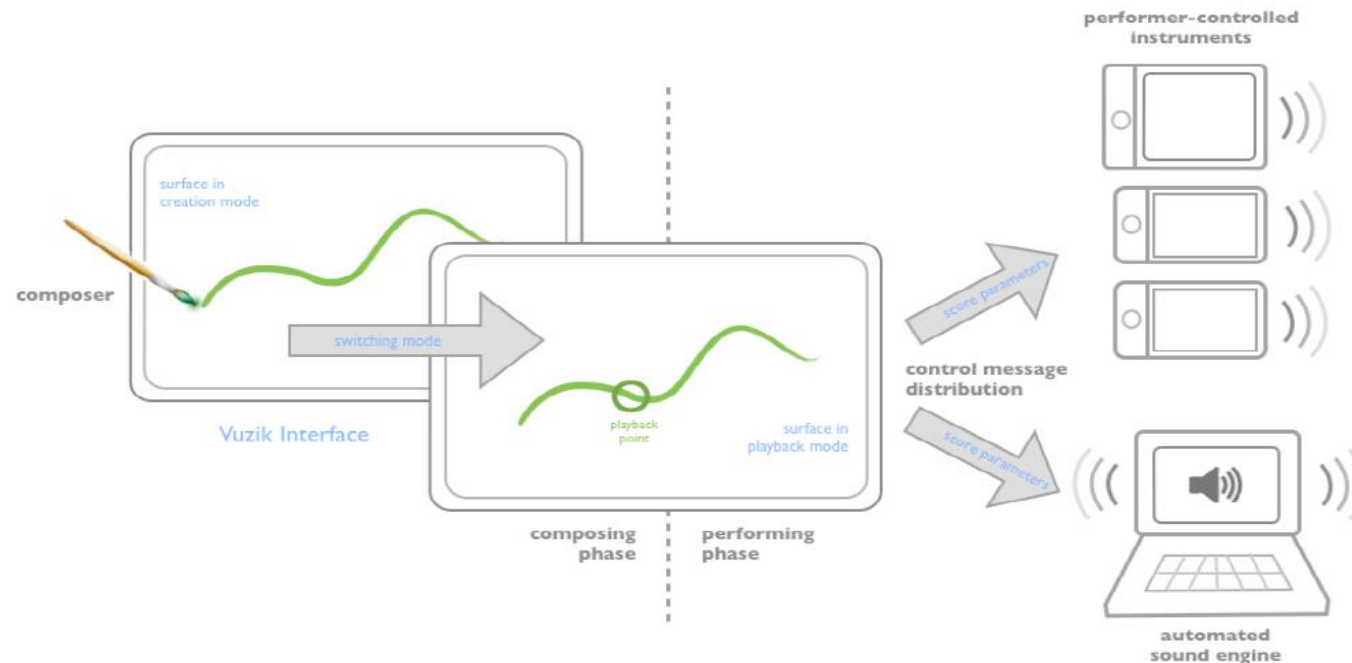
Two modes of operation :

1. Creation — “paint” music in real-time
2. Playback — hear the entire canvas or a selected stroke



IMPLEMENTATION AND USE CASE

- GUI is implemented in C# (WPF) and utilizes the open sound control protocol for messaging



APPLICATIONS

- Originally envisioned as a tool for children to explore music and sound
- Offering the capability for more advanced music composition

<https://www.youtube.com/watch?v=BNzV7lvGJjI> 0:57



FUTURE WORK

- Continue developing vuzik as an educational tool for elementary schools
- Further validate it as composition tool by creating more music works



BACK TO RGB MUSIC



THE PROJECT

RGB Music is a software interface for creating music from an image through clicking on the image.

In this project we aim to map between visual elements to sound elements. For example:

- Map from the RGB value of a chosen pixel to unique instrument tone
- Can be configured to average the RGB value using neighbors pixels



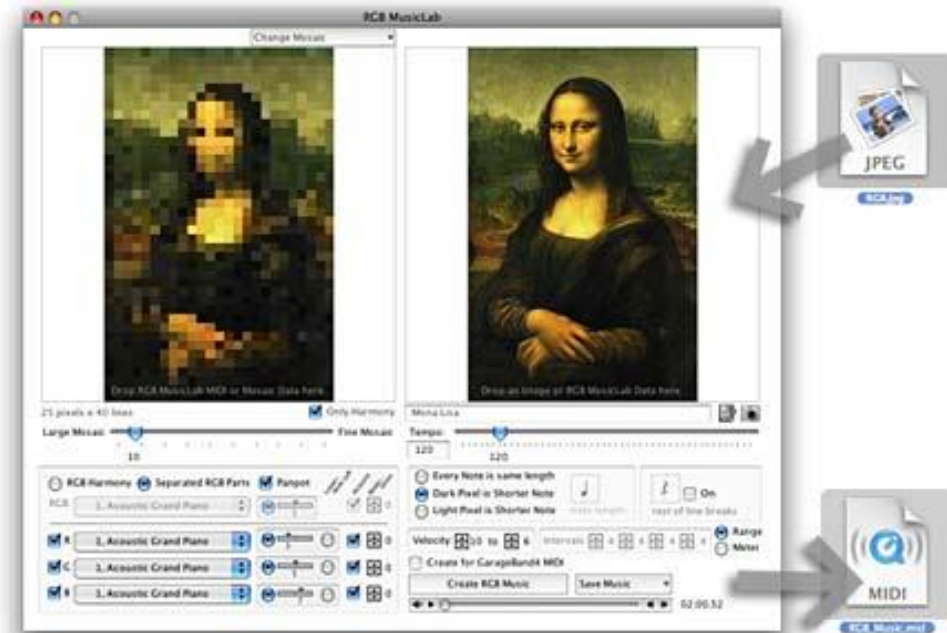
RELATED WORK - VUZIK

- Pros:
 - Very interactive
 - Suitable even for children that can't read
- Cons:
 - Not public
 - User needs to be very creative in order to produce fare music



RELATED WORK - RGB MUSIC LAB

- Created by Kenji Kojima, a Japanese visual artist.
- <http://www.kenjikojima.com/rgbmusic>
- Create a music from an image
 - Reads RGB value of pixels from the top left to the bottom right of an image, then composes an music
- Pros:
 - Contains a lot of options for user input
 - Very advanced
- Cons:
 - Not free
 - Out dated - no support



IMPLEMENTATION

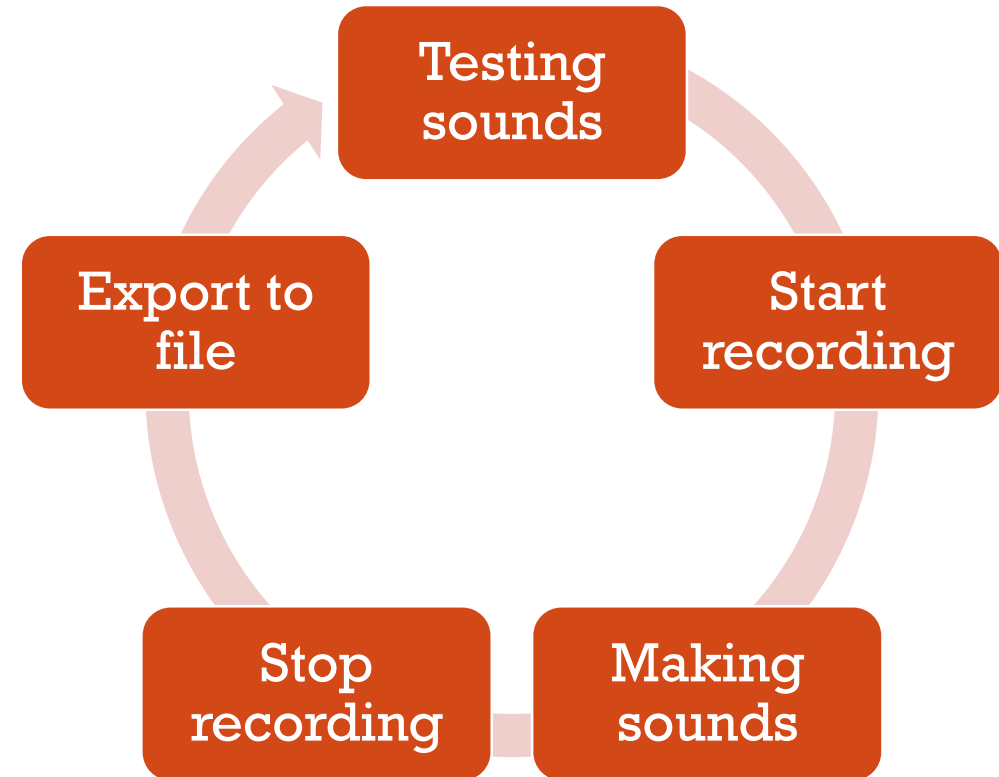
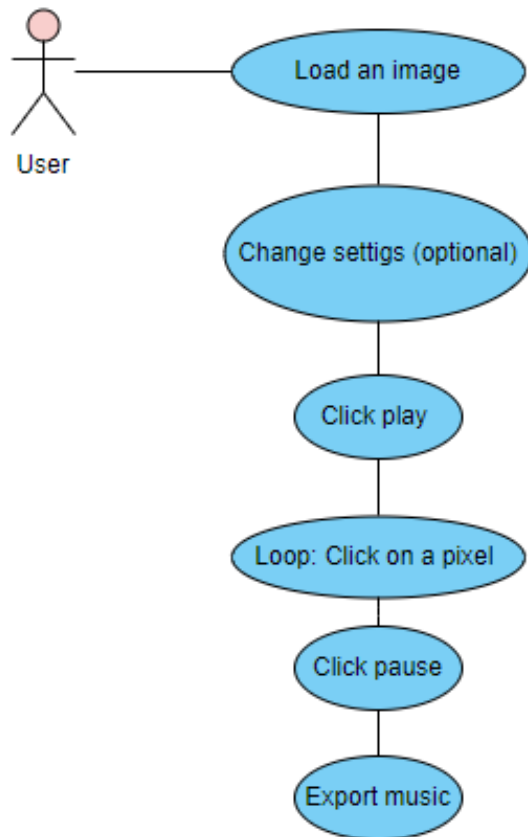
The project will be implemented in Python using the following libraries:

- Tkinter – UI
- SuperCollider - as server
- OSC – as client to interact with SC for creating music
- PIL – Python library for image processing

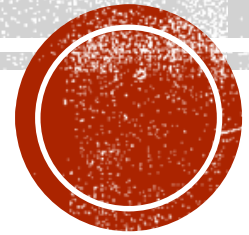


MAIN USE CASE

The main use case is very basic – just load the image and click on the image to create music



PHASE 1 — DEMO



PROS OVER OTHER PRODUCTS

- Our program let the user control which parts from the image will affect the final work
- The user can use multiple images for creating one work



PROJECT TIMELINE

- Phase 1:
 - Implement an engine that creates a sound based on the RGB of the current pixel (according to mouse location)
- Phase 2:
 - Add UI and logic for user input: Sliders, selection of instrument, etc.
 - Support configuration of using neighbors pixels
 - Record the music created
- Phase 3:
 - Add support for creating a music using multiple pictures



QUESTIONS

