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Syracuse University Honors Program Capstone Projects

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# Visualsthesia: Complex Music Visualization for Live Performance

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# Visualsthesia:

## Complex Music Visualization for Live Performance
A Capstone Project Submitted in Partial Fulfillment of the
Requirements of the Renée Crown University Honors Program at
Syracuse University


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Honors Capstone Project in <u>Computer Art</u>


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**Abstract**

Visualsthesia is intended as an interactive visual experience made for the musicians who have influenced my studies while I've been attending Syracuse University. I offer these musicians a gift that I have imagined and created in honor of them, using the medium I desired to grow in. Visualsthesia is a visualization of a live musical performance generated in real-time. The concept is based on Synesthesia, a neurological condition that mixes up the senses. One common type of synesthesia is seeing a color when one hears a note or instrument. Visualsthesia turns that psychological connection between color and music into an interactive installation that can serve as either a game, tool, or an artistic experience for the audience. It exists as a rear-projection on a curtain that encases a performer, to create a personal space that helps the participant's experience to be unique to them. The program, created in the graphical programming software Max/MSP, builds colored particle emitters based on the amplitudes of specific notes heard through the microphone. The colors change with the notes on the scale, and they grow larger or smaller depending on how loud they are played. When one note is prominent in the music, that color fills the screen and changes the feel of the image. The program also reads the quality of a chord, as in whether it is major or minor or augmented, etc. The chord quality designates what shape the particles are, and when the shape changes the image's overall texture changes. The piece can serve as an analytical tool for musicians to use while practicing, because the image is created using precise data from the microphones. The particle shapes have choices of different libraries, some less contrasting, others more so. The novelty shapes change the interest in the program to be more for fun. It becomes a game whose goal is beauty and whose controllers are musical instruments. The interactive aspect of the program has an immediate reaction time and is accurate enough that figuring out a certain note or chord will recreate an image that you made earlier, so there is a space for learning and developing a skill through continued use of the program. Visualsthesia is originally a piece of art, and can still simply be a gallery installation. I make art that shares an experience with someone, encourages curiosity and engages more than just one sensation.

**Table of Contents**