

## VA402 PROJECT PROPOSAL

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### **PROJECT DESCRIPTION**

My project is about creating a sound sensitive dress containing LEDs.

### **GOALS & OBJECTIVES**

The project will show LED movement through sound sensitive sensors on a fabric. It will show us how exciting can be the implementation of LED onto a fabric.

My objective is to catch people's attention with the concept of wearable technology which is a field with endless and striking opportunities. I want to create a great and different experience of listening to music. Want to make a difference in a daily-life experience.

My goal is to create a functional and visually attractive product which can be used by newcomer female DJs who cannot afford expensive motion graphics to support their stage performance. This dress can appeal both to professionals who deal with music on a daily basis and to us, humble listeners who want to create an extra joy out of the action of listening to music.

### **TARGET AUDIENCE**

Music is a field which is so universal and broad, it does appeal to every single human on earth. Whether they are infant, teenager or an adult. Every song has a different impact on different people. The experiences that we go through, the things that we witness, the feelings that we feel in our lives determine how we get affected from music. In this context i cannot restrict the project with a certain age or gender group. But specifically, i believe that DJs can make use of this product and make their performances even more stunning. Apart of that anyone who would like to have a memorable experience of listening to music can be the subject of this project.

### **BACKGROUND INFORMATION**

The project is based on the invention that is called 'wearable technology'. Wearable technology is formed from the marriage of electronics and fabric. The designs often incorporate practical functions and features. In some cases there is a particular goal (in case of fitness gadgets) and some are designed only for fun. I've been following latest news and inventions in the wearable technology field for quite some time. Especially Hussein Chalayan's projects amazed me. In addition to that in my researches, i encountered several wearable technology projects related to sound. The idea of creating visual music seemed pretty fun and also i thought that it would be very attractive to the eye watching the whole process. So eventually my project was born out of this feeling of excitement.

In 21st century, music is always supported by visuals; video clips, short screenings, graphics.. Creating video mapping and graphics for a stage performance is a very expensive job. I believe that this project can really speak to DJs who are new in the field or can't afford high prices to transform their performance into a visual feast. This project can solve the problem of anyone who wishes to support their music with LED in an affordable manner.

First challenge in this project will be the creation of the dress. I actually want to sew the dress myself, since i don't have such experience of tailoring, i might as well end up buying a dress. Next step will be the implementation of the lilypad, LEDs and the sensors onto the fabric. Biggest challenge will probably be the implementation of those materials onto the fabric. I'll learn how LED works, how to combine it with sound and the most of all, the implementation of LED and onto the fabric.

## RELATED LINKS

[etextilelounge.com](http://etextilelounge.com)

[instructables.com](http://instructables.com)

[makezine.com](http://makezine.com)

[atmelcorporation.wordpress.com](http://atmelcorporation.wordpress.com)

[3lectromode.com](http://3lectromode.com)

[dannyg.com](http://dannyg.com)

[www.neonstring.com](http://www.neonstring.com)

[visualmusic.blogspot.com](http://visualmusic.blogspot.com)

[wearabledevices.com](http://wearabledevices.com)

[wearabletechworld.com](http://wearabletechworld.com)

[centerforvisualmusic.org](http://centerforvisualmusic.org)

## DETAILED PROJECT DESCRIPTION

My project constitutes elements such as; LED, lilypad, conductive thread, non-conductive fabric . The user will wear the dress and as soon as the music reaches to a certain frequency, LEDs will start to lighten up. While frequency increases LEDs on the chest will lighten up too. LEDs will respond to the frequency of the sound and create a harmonic effect. I am planning to sew the dress myself but since i don't have that sort of experience, i might as well end up buying the dress, but i'll force myself to sew it myself. The dress will be 85 cm long, all black only a white stripe in the middle of the dress. The fabric will be pretty lightweight, easy to sew. At the sides of the fabric, there'll be neon strings, on the front there'll be 80 LEDs, at the back, 95. On the chest part, there'll be 40 LEDs, on the middle 24, on the bottom part of the dress there'll be 8.

The outcome of this project will be creating a much more fun and memorable way to listen to music through visual music. LED is a tool which enables us pretty magnificent things to do. I do believe that the combination of LED and music will bring joy and excitement to our daily musical experience.

## SCOPE OF THE PROJECT

Will be covering

LED strings

Non-conductive fabric

Lilypad

Conductive threads

Sound sensitivity

Won't be covering

Augmented reality

Motion graphics

## REQUIRED KNOW HOW

First of all i'll try to create the dress by myself. About the implementation of LEDs and lilypad, there are lots of tutorials about how to sew LEDs onto the fabric. I believe that i'll be handling them in an efficient way. Since i don't know a lot about coding, the most difficult part will be to write the code that will procure the LEDs to be sound sensitive.

## **DIFFICULTIES & RISKS**

The most difficult part will probably be the writing of the code which will procure the LEDs to be sound sensitive. . The most significant risk would be the code not to work efficiently after implementing the materials onto the dress, the code not to work efficiently. If the code doesn't work the way i want it to, the whole work will go to waste.

## **PHASES**

1. Acquiring necessary sensors, LEDs and lilypad.
2. Getting the dress.
3. Writing the code.
4. Implementation of sensors, LEDs and lilypad onto the fabric.
5. Hopefully, having a successful functional product.

## **CRITERIA OF SUCCESS**

The first three phases have to be completed by the end of this term. Because the implementation will take quite some time. The criteria to judge this project will be based on the aesthetic look and the functionality of the dress. If i can create really homogeneity and fluidity, the project will be a success for me.

## **REFERENCES**

[visualmusic.blogspot.com](http://visualmusic.blogspot.com)

[wearabledevices.com](http://wearabledevices.com)

[wearabletechworld.com](http://wearabletechworld.com)

[centerforvisualmusic.org](http://centerforvisualmusic.org)

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[atmelcorporation.wordpress.com](http://atmelcorporation.wordpress.com)

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Olsson T., Gaetano D., Wiklund S., Odhaner J., *Open Softwear, Fashionable Prototyping and wearable computing using the Arduino*, JMS Mediasystem Vellinge, Sweden (2011)