Seeing Sound!

Daniel Benjamin

Stephen Krackhardt

Sam Russell

Adrienne Pajer

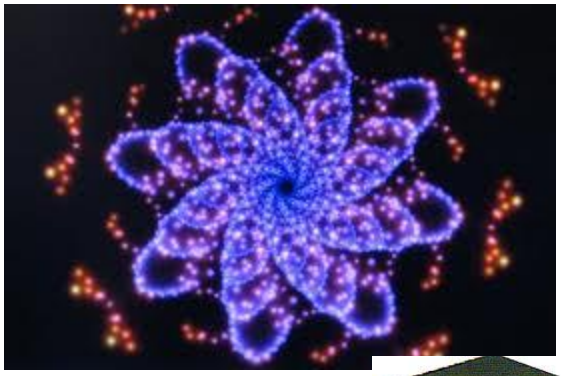
Concept:

- Project will create an entire light show on the spot based on any sound input
- Prototype will take in an audio signal, from a song to a person talking, and use LEDs to make a matching light show

Motivation:

- iTunes and other music players make visual shows to go along with songs, but these players only use songs, and they have to look ahead in the song due to a delay from the song to the visualization
- Our prototype will be able to create a light show from any sound in real time

Competitive Analysis



- iTunes (free)
  - not real time
  - only works with songs
- Color Organ ($65)
  - only does amplitude beat detection
  - no intelligence
  - only one color

- Christmas Tree Light Programmer ($500)
  - All done by user
  - done before hand
  - not in real time

Parts

- Microphone
  - Normal 3.5mm stereo analog output
- LED Display
  - 8x8 LED Matrix
  - Serial Interface
  - Red/Green/Blue

- Microprocessor: BeagleBoard
  - Audio in
  - ARM Cortex A8 Processor
  - RS-232 , I2C, I2S, SPI