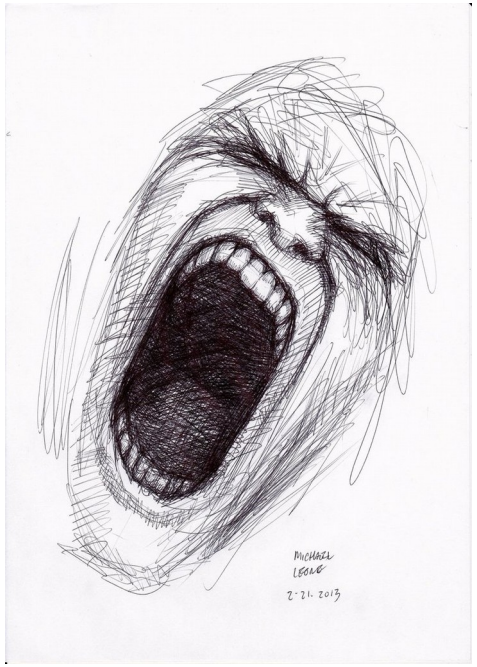
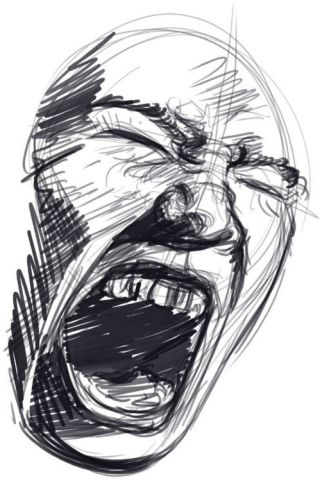


Marietta's drawing

From Karaoke to MidiOke!



What is 'MidiOke'

MidiOke is a libre/open source application which took its name from midi and karaoke.

The aim of this project is to make an application which records voice through microphone, analyze it and then convert the audio signal into MIDI(Musical Instrument Digital Interface) .

The application's output gives to users the opportunity to use their voices in order to compose music without playing any musical instrument. Users can use the midi file as they want, for example insert it into any music program that reads midi files and edit it, visualize it, plug in VST_Instruments and listen it, see the score, etc.

The goal is that everyone can use their voice in order to compose music songs without any knowledge. It gives to everybody the chance to record their inspiration and listen it played by a simulated instrument.

How MidiOke works

Steps:

i. Clear input audio signal through the on-board machine microphone.

ii. Streaming the input to the 'MidiOke' program.

iii. Analise it generally.

iv. Implement the Fourier Analysis.

v. Convert the pitch into midi format.

vi. Return output midi to several ways.

Extended Steps(1)

- **Fourier Analysis (step iv):**
  - *Windowing the signal*
  - *Find the dominant pitch*
  - *Compare the energy to specific threshold*

- **MIDI conversion (step v):**
  - *Transpose the specific pitch into MIDI information*
  - *Store MIDI*

Extended Steps(2)

- **Output MIDI (step vi):**
  - *Return the output in several ways*
  - *Store the MIDI output in midi files*
  - *Import it into a recording station and edit it.*
    (e.g. Cubase, Ableton, Cakewalk, etc)
  - *Produce a music Score*
  - *Plug in some VST Instruments and play the midi as information, quantize the notes.*
  - *Visualize the midi result is several ways like:*
    Plots , Graphs, Velocity / Intensity plots, MIDI Piano clavier

Extra (future) Work

• The big goal would be to make 'MidiOke' functional for all machines and systems.

• In order to achieve that point, we are going to use Arduino to make a 'Plug-and-Play' sound-deviece with one 'input'(microphone) and one 'output' for MIDI file.

• So everybody would be able to use the Arduino-board in order to record voice at every time in every machine in any place and have a midi result to do it whatever they want.

Video.....