

Sound Communication course 2018 - 2019

Final Project Presentation

THE HI-LIGHT PROJECT



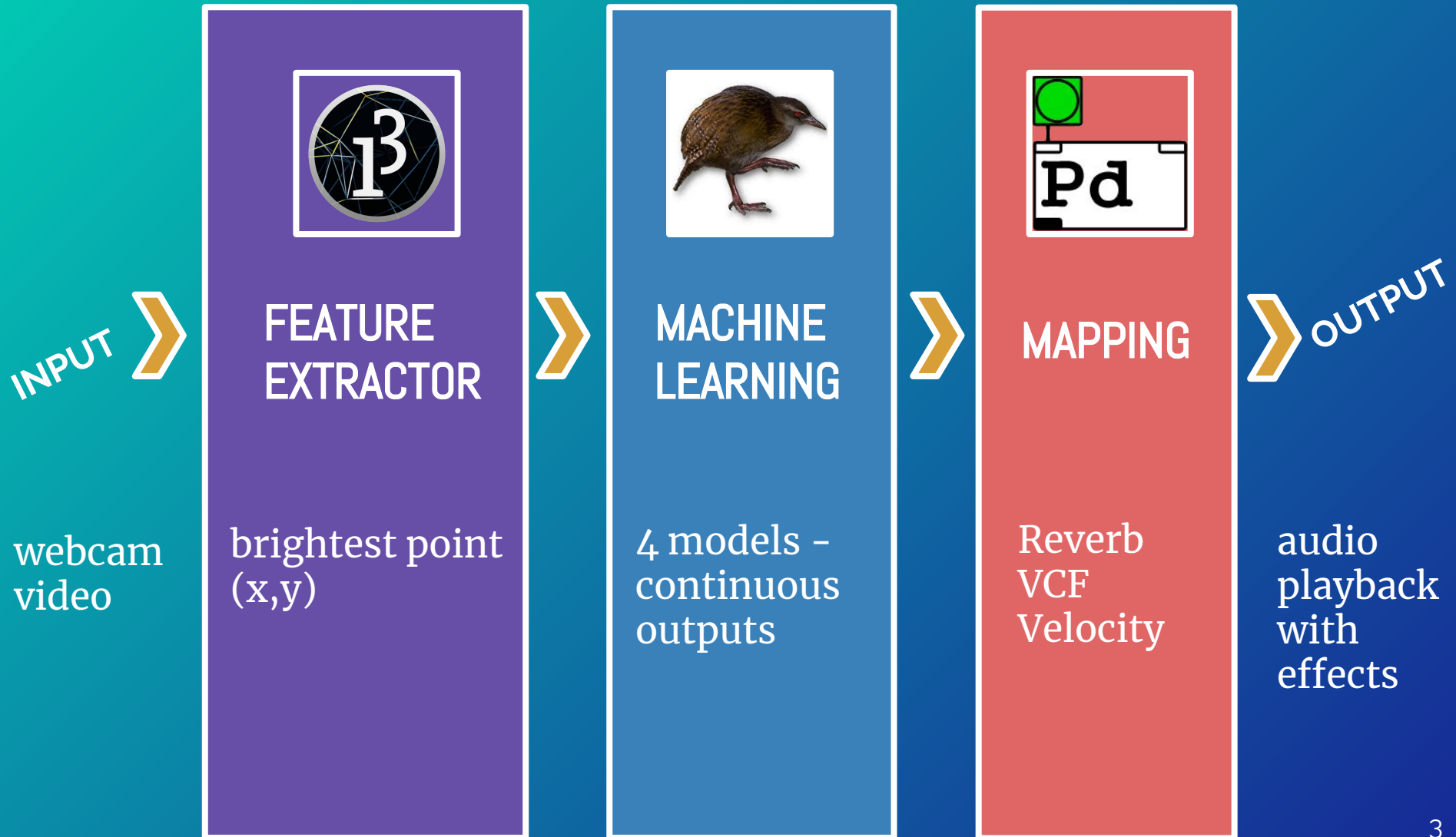
Lida Zacharopoulou



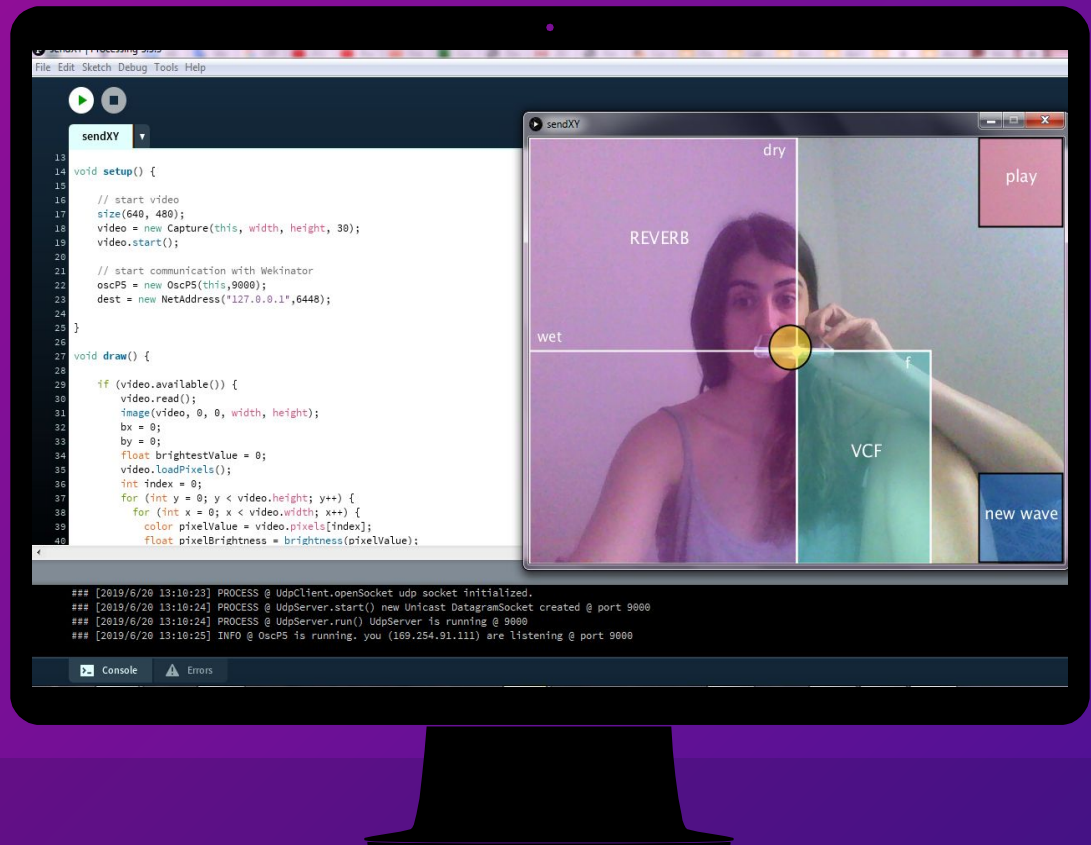
The idea is to play music by
using a light source to control
the audio effects

*The light source can be a headlamp, a reflective
wristband or simply the torch of your phone.*

The Data Pipeline



FEATURE EXTRACTOR

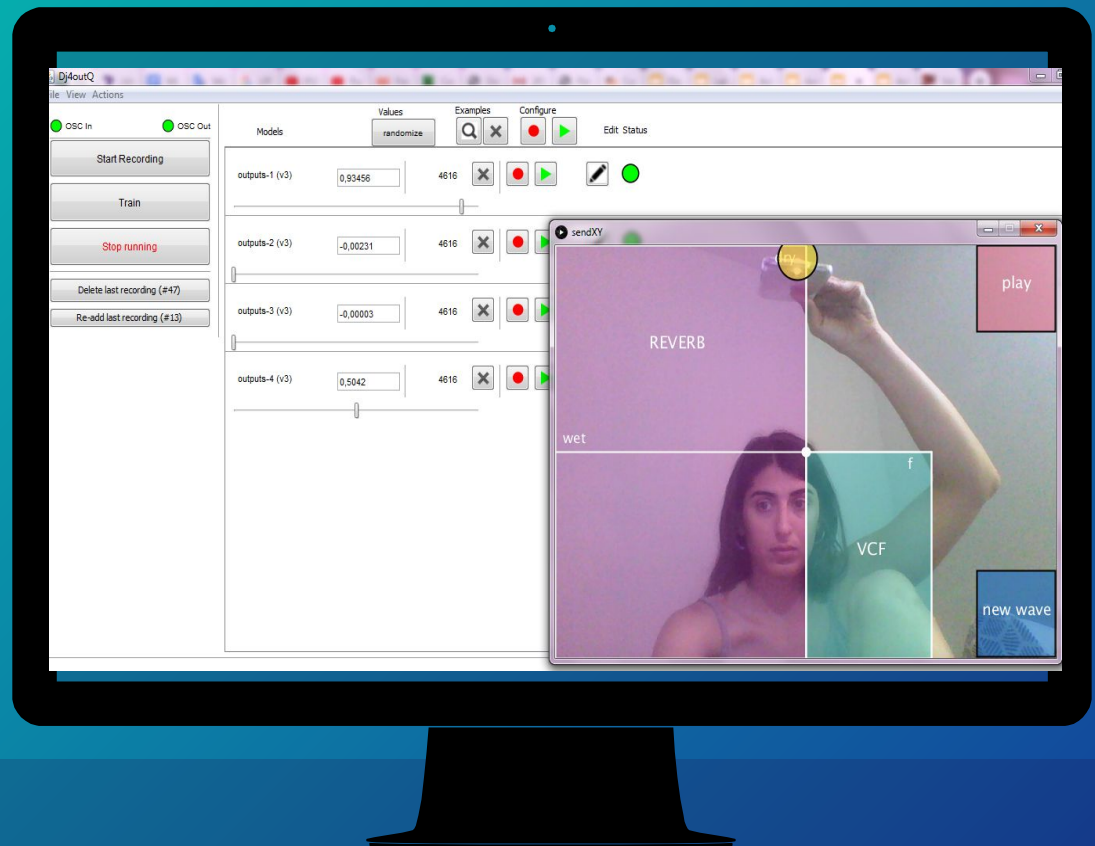


PROCESSING

- ▶ captures video
- ▶ sends coordinates of brightest point to Wekinator via OSC at default port 6448
- ▶ displays the user interface



MACHINE LEARNING

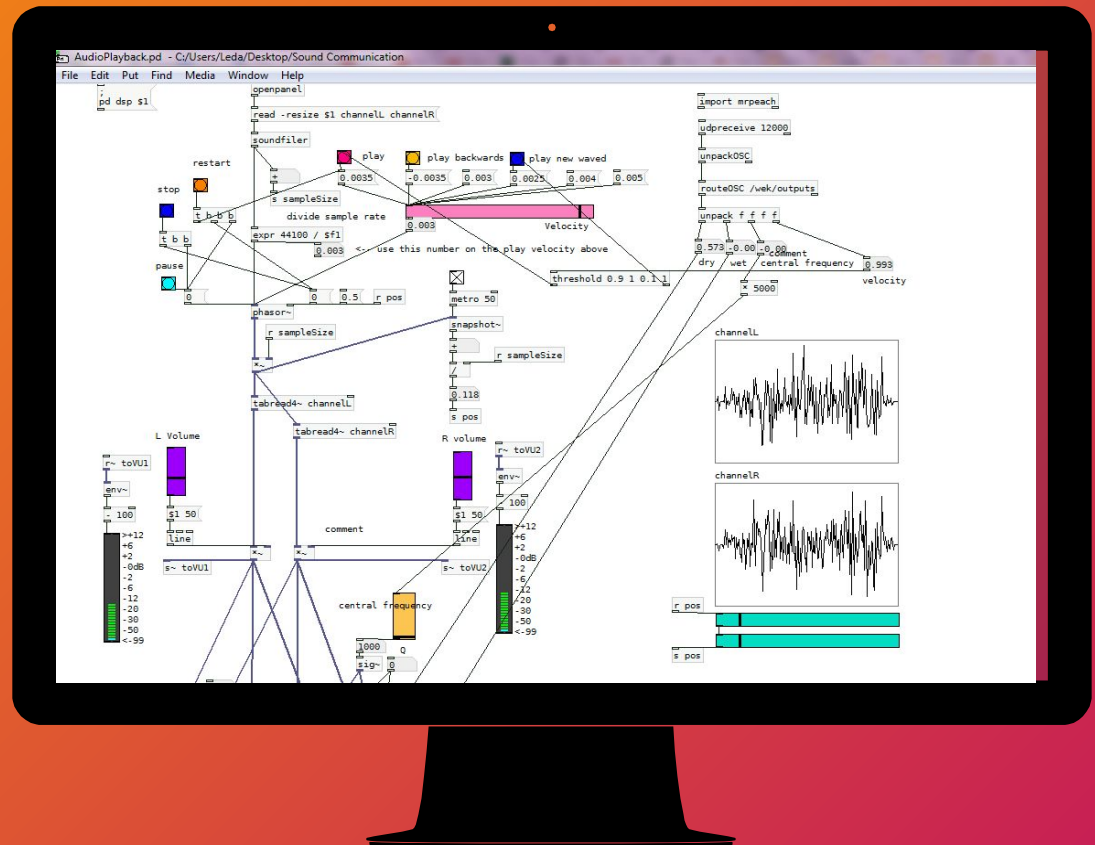


Wekinator

- ▶ receives at port 6448, sends to 12000
- ▶ 2 wek/Inputs: the coordinates of the brightest point
- ▶ 4 models trained based on the user interface
- ▶ 4 wek/outputs, type continuous:
 - ▶ dry, wet, central frequency and velocity

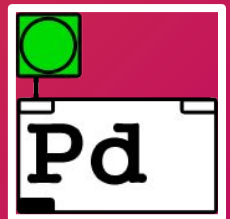


MAPPING



Pure Data

- ▶ receives 4 continuous inputs from Wekinator via OSC to control Reverb, VCF and switch between normal velocity or slower
- ▶ supports a variety of other audio playback options, filtering and effects



PURE DATA: audio effects supported:

Velocity

Velocity of playback can be faster slower or reverse than the original one using a slider. With the visual interface we can use the light to switch between a normal on and a slower one.

Reverb

There are 3 parameters: dry, wet and roomsize. The light controls the first two.

VCF

Voltage controlled band -pass filter. The Q value is initialized with 7, while the central frequency is controlled by the light.

Volume

There is control for the Left and Right channel volume

Delay

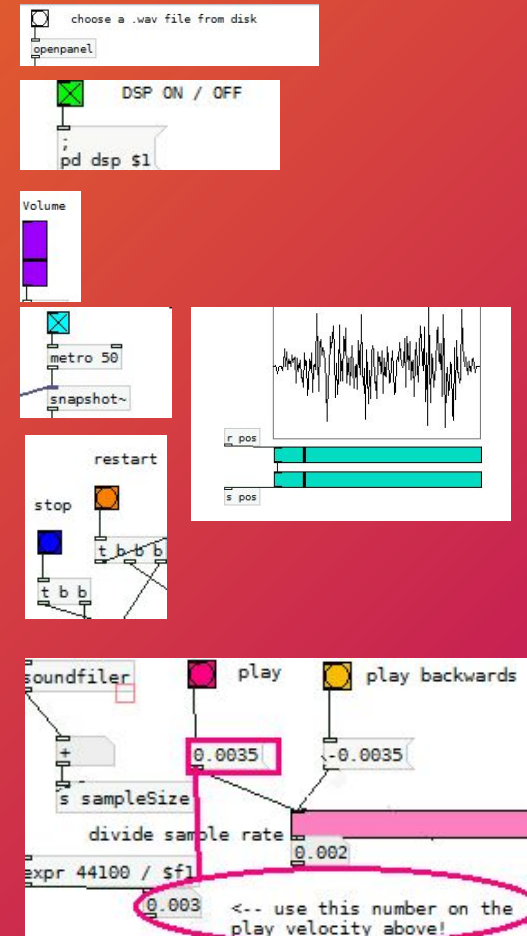
A delay effect can be used by connecting it to the dac.

Filters

There are other options available in filtering the audio like LFP, HPF, BPF.

Instructions of use

- 1) On the **pure data** patch:
 - a. Load a .wav file. It does not support .mp3.
 - b. Hit the green button to open the DSP.
 - c. Adjust the volumes on Right and Left channel on the middle
 - d. Hit the light-blue button on the metronome to track the progress of the playback on the same colored bars on the right.
 - e. Press stop.
 - f. The song used for the demo is Kill V. Maim by Grimes. If you want to use another one you need to adjust the play button with its own velocity, found as the result of the sample rate's division. Experiment with other velocities that sound good using the velocity slider.



- 2) Open the **processing** script. Make sure your webcam works.
- 3) Open the **wekinator** project and hit run. It is already trained,

thanks!

ANY QUESTIONS?



You can watch a demo here:

<https://www.youtube.com/watch?v=-DjixY9RnE>

.. and find the code here:

<https://github.com/leedah/hi-light>