



Are you an artist that wants to introduce sound into your practice? Are you a musician that wants to start making electronic music?

Cherif Hashizume

Sunday 23rd February

10:00 – 15:00/16:00

Quarterhouse, Meeting Room

For Profound Sound 2020, the brilliant Cherif Hashizume, has put together a series of four workshops that will teach you all you need to know to start making your own sound work and audio creations.

Workshop 1 will be free as part of Profound Sound festival, so you can try it out and decide if it's something you'd like to learn more about and sign up to the remaining three workshops. The workshops will take place in April, June and September and will cost £20 per workshop.

There are 10 places available and below is what you will need to bring with you. If you have any queries get in touch on olivia@folkestonefringe.com.

Requirement for participation:

Working laptop (Windows/OSX/Linux)

Headphone/Ear Buds

Not compulsory but helpful

-Audio interface (for day 3)

-Midi keyboard/controller(day 2-4)

Day 1 – Installation

Hello World, Trigger Bang Bang (event order execution) and Inlet/Outlet

The first day consists of installing Pd vanilla (original version developed and updated by Miller Puckett) on both Windows, OSX and Linux systems. We then move on to the core concept of Pd. As we deal with real time audio, it is crucial for the participants to understand the way Pd executes various events within the environment. We start with learning the difference between “objects”, “messages”, “numbers”, “symbols” and “comments” as well as trying a first patch for “hello world”. The patch will show the participants how to print the sentence “hello world” into the Pd window. The next step will be for the participants to get into the way Pd handles events. The concept of “bang” is very unique to the coding environment and it is the most important aspect of the environment. We will use various objects to create different ways to change the order of events so that we can create different outcomes. We will also look into the way each object “inlets” and “outlets” which is also integral part of event ordering.

Day 2

Basic Sound Synthesis

The second day is all about the more fun side of Pd. We start with going through multiple sound generators such as `osc~`, `phasor~` and `noise~`. We also explore how to control its pitch, amplitude and timbre by utilising audio rate math and manipulation objects. The participants are also introduced to basic ideas behind audio filter theory as well as different modulation sources such as envelope and LFO (Low Frequency Oscillator). Once we become acquainted with the basics of sound synthesis, we

will add MIDI (Music Instrument Digital Interface) functionality so we can make the patch more tactile and playable. We then proceed to add more advanced functionality to sound modification such as FM (Frequency Modulation), AM (Amplitude Modulation also known as Ring Modulation), sound folding and distortion.

Day 3

Audio Recording and Sampling

We now dive deeper into the amazing world of audio manipulation in Pd. We will start utilising more advanced objects such as array, tabwrite~ and tabread~ objects to build audio recorder and sampler. The participants are guided through more complex theories surrounding audio sampling such as analog to digital conversion, nyquist theorem and bit quantisation as well as how to set up sound card and audio interface. Once we have the basic concept of sampling, we will be combining what we have covered in Day Two to create fully functioning sampler with advanced controls. This is a great way to understand that synthesis and sampling are very similar in concept. To wrap up the day, we look into more advanced sampling method called granular synthesis. Granular synthesis is extremely powerful way to manipulate and process pre-recorded audio samples with relatively easy steps. The only difficulty for inexperienced programmers to create granular engine is to understand the concept of windowing and this workshop will thoroughly cover how to apply windowing correctly to create a smooth sounding engine.

Day 4

Sound FX and Sequencing

On the final workshop, we look into the way to put all the things we covered during the last 3 workshops together. We start with building simple delay-based sound effects such as pitch shifter, tape/dub delay and chorus. We also expand the ways we can manipulate sound further utilising sample/bit rate reduction, panning and auxiliaries. The very final step will be to build a simple sequencer to give the patches autonomy in terms of rhythmic and melodic patterns as well as automated modulation patterns. This activity will tie all the elements that were covered in the last three workshops. We will also allocate a couple of hours of the day to have time for Q&A as well as short performance from each participant.

If you are interested in signing up for some of the workshops and not the others please make sure you have the right level of experience. For example workshops 1 & 2 maybe too basic if you are someone who already has some Pd experience already or workshops 3 & 4 would be too advanced if you have never used Pd or done any audio DSP programming.

Cherif Hashizume

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