Live Coding Using Crowdsourced Sounds and a Virtual Agent

State of Affairs and Implications for HCI Research

Anna Xambó

Music, Technology and Innovation - Institute for Sonic Creativity (MTI^2)
De Montfort University

ATLAS Colloquium 23.2.2021

about me

Research

Teaching

Practice

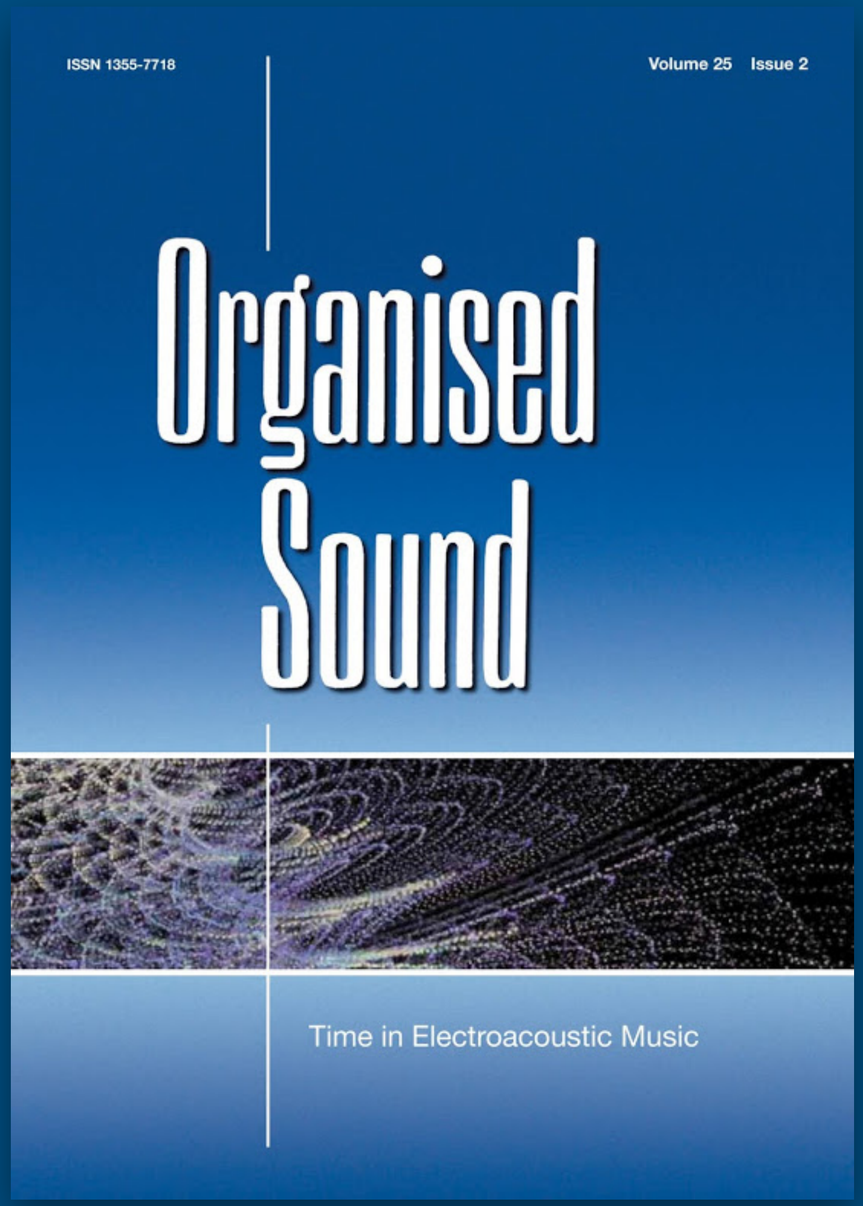
about DMU / MTI²


Scotland
Scotland
Newcastle upon Tyne
North
Yorkshire and Humberside
York
Leeds
Preston
Kingston upon Hull
North West
Sheffield
Stoke-on-Trent
East Midlands
Leicester
Wolverhampton
West Midlands
Northampton
East Anglia
Wales
Wales
Luton
Oxford
Swindon
Bristol
Reading
London
Southend on Sea
South East
South West
Southampton
Bournemouth
Plymouth
Douglas
Wicklow
-5°40'
-3°30'
-1°20'
0°50'
54°20'
52°30'
50°40'

DE MONTFORT UNIVERSITY LEICESTER

MTI² INSTITUTE FOR SONIC CREATIVITY

- 27K students, +3K staff
- 4 faculties: ADH, BAL, H&LS, CEM
- Gold rating in the 2017 Teaching Excellence Framework



Music, Technology and Innovation - Institute for Sonic Creativity (MTI²)

- RC established in 1999 by Prof. Leigh Landy (RC part of LMS, CEM).
- Topics: new technologies for electroacoustic music & sonic art.
- Related undergraduate and postgraduate courses.
- International research: OS journal, EMS21 (7-10 July 2021)…

Organised Sound: https://www.cambridge.org/core/journals/organised-sound
EMS21: http://www.ems-network.org/ems21

about the project

MIRLCAuto: A Virtual Agent for Music Information Retrieval in Live Coding

Partners: IKLECTIK, Leicester Hackspace, L'Ull Cec, Phonos, MTI²

Collaborators: TOPLAP Barcelona, FluCoMa, Freesound

Awarded with an EPSRC HDI Network Plus Grant

Online Workshop
Performing with a virtual agent: machine learning for live coding

London (IKLECTIK)
7/9/11.12.2020 - 19:00-21:00 (GMT)

Barcelona (L'Ull Cec)
11/13/15.1.2021- 19:00-21:00 (CET)

Leicester (Leicester Hackspace)
25/27/29.1.2021 - 19:00-21.00 (GMT)

More info at:
mirlca.dmu.ac.uk/workshops

Partners

IKLECTIK [off-site]

Collaborators

Team

Anna Xambó is a Senior Lecturer in Music and Audio Technology at De Montfort University, a member of Music, Technology and Innovation - Institute of Sonic Creativity (MTI^2), and an experimental electronic music producer. Her research and practice focus on sound and music computing systems looking at novel approaches to collaborative, participatory, and live coding experiences. She is PI of the EPSRC HDI Network Plus funded project "MIRLCAuto: A Virtual Agent for Music Information Retrieval in Live Coding", investigating the use of a live coder virtual agent and the retrieval of large collections of sounds.
annaxambo.me

Since 2006, helped by a fuzzy network of collaborators, **Sam Roig** has been directing l'ull cec, a cultural organization that has produced a wide assortment of public events and artistic projects related to sonic arts and experimental music, as well as dissemination activities around audio technology topics related to these disciplines. He is currently a PhD candidate at the University of Huddersfield and co-organises the MIRLCAuto's project workshops.
lullcec.org

Eduard Solaz founder and director of IKLECTIK, London. IKLECTIK focuses on experimentation in arts, sound art, installation and cross disciplinary works. They expand their space as a research arts laboratory where inter-disciplinary lines can overlap to create projects that explore processes and techniques, address social, political, cultural and critical issues.
iklectikoffsite.org

Isa Ferri is IKLECTIK's assistant curator and sound engineer. After obtaining her Master in Collection and Exhibition Registrar (2009), she started her career working for Massimo De Carlo and Massimo Minini Gallery, for then specialising in production and development of automated artworks facilitating the meeting of Engineering and Art. In 2017 she got the Diploma in 'Music Technology and Production' becoming permanent part of the IKLECTIK team in London and of the Sziget Festival Main Stage Sound Engineering team in Budapest.
iklectikoffsite.org

Active as an experimental music maker, **Ángel Faraldo** extends his work with sound installations, site-specific actions and sound design for dance and opera. He is interested in processes that maximise minimal resources, developing a critical and ecological perspective of live-electronic music, as materialised in his cycle The Feedback Study Series, his digital synthesiser MISS or his approach towards the no-input-mixer. Furthermore, he does significant labor performing and producing live-electronic music, especially as a member of Vertixe Sonora Ensemble, and as artistic director of the Phonos Foundation in Barcelona. He has studied at the Royal Conservatoire of Music (Madrid) and the Institute of Sonology (The Hague), obtaining his PhD degree from the Music Technology Group at Pompeu Fabra University (Barcelona), where he is currently a teaching associate.
www.angelfaraldo.info | www.upf.edu/web/phonos

Richard Forrest is a retired Electronics / Software engineer who worked in the Automotive and Aerospace industries. He is a member of Leicester Hackspace which is a venue for people to pursue their creativity in digital, electronic, mechanical and computer projects. He has just launched his own embedded software consultancy which offers to design embedded software using techniques that Richard has developed using the experience he has gained during his working career. Richard has performed music as a violin player in a symphony orchestra and as a chorister, having sung all the harmony parts at different times during his life. He has an appreciation of classical, modern, jazz, film and television theme music and a good grasp of music theory.
leicesterhackspace.org.uk
zoag.net

Tony Abbey is a retired Space Electronics engineer specialising in cooled CCD cameras for X-ray astronomy at Leicester University. Now volunteering at The National Museum of Computing at Bletchley Park where he is helping to rebuild the 1949 Valve Computer - EDSAC which kickstarted computing in the UK. Helped start up Leicester Hackspace where he was a director and is now company secretary. Interested in electronic music from a teenager. Built his first transistor oscillator keyboard instrument in the 1960's so he could play 'Telstar' by the Tornadoes. He became interested in electronic music at Southampton Uni where he did an Electronic Engineering degree and have the LP of 'Switched on Bach' by Walter Carlos (later Wendy Carlos). Fan of Kraftwerk and the Pet Shop Boys. He wants to learn if the on-line composing project is music as he would define it.
leicesterhackspace.org.uk

https://mirlca.dmu.ac.uk/team/

outline

- **The Context**
- **The System**
- **Outreach**
- **Discussion**
- **Conclusion**

the context

machine musicianship

- AI applied to computer music systems where the systems have the ability to learn and evolve (Rowe 2001).
  - Voyager (Lewis 2000), ability to improvise with a human improviser.
  - The Continuator (Pachet 2003), ability to learn and play with the performer’s style.
  - Shimon (Hoffman et al. 2010), a robotic musician with ability to improvise with humans.

ML + NIMEs

- Embedded devices that incorporate trained ML models:
  - Augmented acoustic instruments (DeSmith et al. 2020; Macionis & Kapur 2018).
  - New DMIs (Fiebrink & Sonami 2020, Næss & Martin 2019).
- ML toolkits for music e.g. Wekinator (Fiebrink et al. 2009), ml.lib (Bullock & Momemi 2015); FluidCorpusMap (Roma et al. 2019), and so on.

IML

- Interactive machine learning (Fails and Olsen 2003).
- Interactive machine learning as a creative musical tool (Fiebrink and Caramiaux 2016).
  - Long-term co-design process (Fiebrink & Sonami 2020).
  - Multi-user models in mobile music (Roma et al. 2018).

ML + live coding

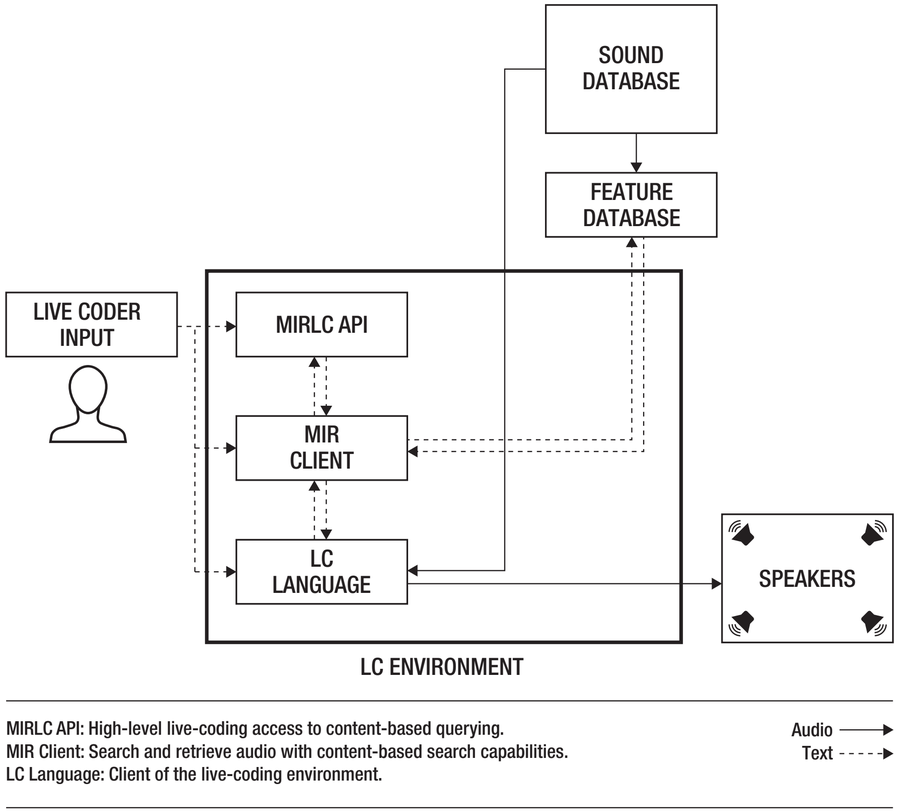
- **Machine listening**
  - Algoravethmic remix system (Collins 2015).
  - APICultor (Ordiales and Bruno 2017).
  - Cacharpo (Navarro and Ogborn 2017).
- **Online training process**
  - The Mégra system (Reppel 2020).
  - Sema (Bernardo et al. 2020).

other approaches to ML + live coding…

- Rule learning (Paz 2015).
- Cibo’s performance style generation (Stewart et al. 2020).
- Collaborative live coding improvisation (Subramanian et al. 2012).
- Gamification (Lorway et al. 2019).

MIRLCRep

- Provides a high-level musical approach to operate with audio clips in live coding using music information retrieval techniques.
- Mid- and high-level content-based queries (e.g., duration, bpm, pitch, key, or scale) and text-based queries (i.e., tags).
- Use of an online database with preanalyzed audio features.
- It is designed for repurposing audio samples from Freesound using SuperCollider.
- Demo: https://vimeo.com/249968326 (8:36)



Xambó, A., Lerch, A. and Freeman, J. (2019). "Music Information Retrieval in Live Coding: A Theoretical Framework". Computer Music Journal, 42(4), Winter 2018, pp. 9-25.

Xambó, A., Roma, G., Lerch, A., Barthet, M., Fakekas, G. (2018) "Live Repurposing of Sounds: MIR Explorations with Personal and Crowdsourced Databases". In Proceedings of the New Interfaces for Musical Expression (NIME '18). Blacksburg, Virginia, USA. pp. 364-369.

```
// instantiation
~a = MIRLCRep.new
~b = MIRLCRep.new


// GET SOUNDS BY TEXT

// getsound(id=31362, size=1)
~a.id(323399)
~a.id(19246)
~a.id(19247)
~b.id(19248)
~b.id(192468)

// random(size=1)
~a.random
~a.random(2)
~a.random(3)
~b.random

// tag(tag="noise", size=1)
~a.tag("nail", 3)
~a.tag("chimes", 2)
~a.tag("noise", 2)
~a.tag("hammer", 2)
~b.tag("grain", 2)
~b.tag("humming", 3)
```

MIRLCRep 1.0

```
// GET SOUNDS BY CONTENT & GET SOUNDS BY CONTENT WITH FILTER

// content(size=1, feature = 'dur', fvalue = 1, fx = 'conf', fxvalue = 'hi')
~a.content // sounds of 1 sec of duration
~a.content(1, 'dur', 10) // sounds of 10 sec of duration
~a.content(1, 'dur', 1, 'key', 'A')
~a.content(1, 'dur', 4, 'scale', 'minor')
~a.content(1, 'dur', 1, 'conf', 'lo')
~a.content(2, 'pitch', 100, 'conf', 'lo')
~a.content(1, 'key', 'Asharp')
~a.content(5, '.lowlevel.spectral_complexity.mean:',1, 'conf', '[0 TO 0.3]') // Using directly Essentia's format
~b.content(1, 'bpm', 120)


// GET SIMILAR SOUNDS BY EXAMPLE

// similar(targetnumsnd=0, size=1)

~a.similar
~a.similar(0)
~a.similar(0, 2)
~b.similar(1)


// GET SIMILAR SOUNDS BY FILTER

// filter (targetnumsnd=0, size=1, fx = 'conf', fxvalue = 'hi')

~a.content(1, 'dur', 4, 'scale', 'minor')
~a.filter(1, 1,'conf','lo')
~a.filter(1, 1,'conf','hi')
~a.filter(2, 1,'conf','hi')

~b.content(1, 'dur', 2)
```

MIRLCRep 1.0

MIRLCRep: Music Improvisation
by Jack Armitage

Sound samples used:

Ambience, Jacksonville Zoo, A.wav by InspectorJ https://freesound.org/people/InspectorJ/sounds/400831/
Birds Singing 03.wav by DCPoke https://freesound.org/people/DCPoke/sounds/387978/
Birds in the forest.wav by straget https://freesound.org/people/straget/sounds/402809/
Bird Whistling, Single, Robin, A.wav by InspectorJ https://freesound.org/people/InspectorJ/sounds/416529/
Wind long.ogg by vandale https://freesound.org/people/vandale/sounds/379465/
Children screaming in a Pirate Ship Playground, church bell in background by felix.blume https://freesound.org/people/felix.blume/sounds/410518/
Ambience, Children Playing, Distant, A.wav by InspectorJ https://freesound.org/people/InspectorJ/sounds/398160/
lawnmower.wav by gadzooks https://freesound.org/people/gadzooks/sounds/20737/
Cat, Screaming, A.wav by InspectorJ https://freesound.org/people/InspectorJ/sounds/415209/
High Street of Gandia (Valencia, Spain) by Jormarp https://freesound.org/people/Jormarp/sounds/207208/
Dog Barking, Single, A.wav by InspectorJ https://freesound.org/people/InspectorJ/sounds/406085/
TRAIN_VOICE.mp3 by Manicciola https://freesound.org/people/Manicciola/sounds/173314/
Walking in Long Grass.wav by Leafs67 https://freesound.org/people/Leafs67/sounds/155589/
Group_of_Dogs_Barking.WAV by ivolipa https://freesound.org/people/ivolipa/sounds/337101/
Dog Barking, Single, A.wav by InspectorJ https://freesound.org/people/InspectorJ/sounds/406085/
Two Barks.wav by Puniho https://freesound.org/people/Puniho/sounds/115536/
cat meow II by tuberatanka https://freesound.org/people/tuberatanka/sounds/110010/
Cat, Screaming, A.wav by InspectorJ https://freesound.org/people/InspectorJ/sounds/415209/
cat meow by tuberatanka https://freesound.org/people/tuberatanka/sounds/110011/
Ambience, London Street, A.wav by InspectorJ https://freesound.org/people/InspectorJ/sounds/398159/
High Street of Gandia (Valencia, Spain) by Jormarp https://freesound.org/people/Jormarp/sounds/207208/
On A Bus by thef1like https://freesound.org/people/thef1like/sounds/412932/
political_discussion(IT) by Manicciola https://freesound.org/people/Manicciola/sounds/182860/
TRAIN_VOICE.mp3 by Manicciola https://freesound.org/people/Manicciola/sounds/173314/
Inside Car Ambience Next to School More Quiet Version.wav by 15050_Francois https://freesound.org/people/15050_Francois/sounds/326146/
Heavy Rain by lebcraftlp https://freesound.org/people/lebcraftlp/sounds/243627/
Train upon us.wav by markedit https://freesound.org/people/markedit/sounds/157873/
Large_crowd_medium_distance_stereo.wav by eguobyte https://freesound.org/people/eguobyte/sounds/360703/
On A Bus by thef1like https://freesound.org/people/thef1like/sounds/412932/
Coffee Maker by Villaperros https://freesound.org/people/Villaperros/sounds/170621/
London Underground, Arriving, A.wav by InspectorJ https://freesound.org/people/InspectorJ/sounds/401989/
German / English Airport Announcement by euromir https://freesound.org/people/euromir/sounds/256878/
tannoying remix of 245957__kwahmah-02__tannoy-chime-05.flac by Timbre https://freesound.org/people/Timbre/sounds/246322/
Spaceship Fly-by, A by InspectorJ https://freesound.org/people/InspectorJ/sounds/397948/
plane.wav by inchadney https://freesound.org/people/inchadney/sounds/275138/
20070117.takeoff.wav by dobroide https://freesound.org/people/dobroide/sounds/29612/

MIRLCRep: Music Improvisation
by Alo Allik

Sound samples used:

Rainstick 2.wav by gevaroy https://freesound.org/people/gevaroy/sounds/347380/
Instrument_rainstick.aif by vrodge https://freesound.org/people/vrodge/sounds/119547/
Glass Smash, Bottle, E.wav by InspectorJ https://freesound.org/people/InspectorJ/sounds/344272/
sword_01.wav by dermotte https://freesound.org/people/dermotte/sounds/263015/
Footsteps, Ice, A.wav by InspectorJ https://freesound.org/people/InspectorJ/sounds/338265/
Celery crunch.wav by xenognosis https://freesound.org/people/xenognosis/sounds/137228/
b1.wav by deleted_user_2195044 https://freesound.org/people/deleted_user_2195044/sounds/243212/
Bullroarer by m.newlove https://freesound.org/people/m.newlove/sounds/242926/
Didgeridoo, A.wav by InspectorJ https://freesound.org/people/InspectorJ/sounds/398272/
Infrasound - 12hz - Sine Wave.wav by Headphaze https://freesound.org/people/Headphaze/sounds/235209/
Infrasound - 20hz - Sine Wave.wav by Headphaze https://freesound.org/people/Headphaze/sounds/235212/
Laser/Machine humming by Shredster7 https://freesound.org/people/Shredster7/sounds/166098/
bit.aif by matthewgeorge https://freesound.org/people/matthewgeorge/sounds/34909/
Infrasound - 12hz - Sine Wave.wav by Headphaze https://freesound.org/people/Headphaze/sounds/235209/
Apple crunch.wav by xenognosis https://freesound.org/people/xenognosis/sounds/137231/
Eating chips by giddster https://freesound.org/people/giddster/sounds/383398/
Boots on Scree going downhill.wav by corble https://freesound.org/people/corble/sounds/402846/
Glass Smash, Bottle, E.wav by InspectorJ https://freesound.org/people/InspectorJ/sounds/344272/

"Crowdsourced Eulerisms". Eulerroom Equinox 2020.
Streaming from Sheffield, UK. March 23, 2020.

MIRLCRep 2.0

Unwanted Situations: The Guitar Case

n02-peterMann

from noiselets by carpal tunnel

04:13 / 11:10

Digital Track

Streaming + Download

Includes high-quality download in MP3, FLAC and more. Paying supporters also get unlimited streaming via the free Bandcamp app.

Buy Digital Track name your price

Send as Gift

Buy the Full Digital Album

from noiselets, released January 8, 2018
List of sounds used from Freesound.org coming soon.

Share / Embed Wishlist

https://carpal-tunnel.bandcamp.com/track/n02-petermann (around 04:26)

overarching research question

Can we build a **virtual agent** that **learns** from human live coders using **machine learning** algorithms and a **large dataset of sounds** which goes beyond the approach of following live coder actions (also known as the call-response strategy) and creates **legible and negotiable actions**?

research question - ML task 1

Can we build a **VA** that **learns** from the **musical preference** of a live coder within a **situated musical action** by means of machine learning algorithms applied to the live exploration of a large database of sounds?

“situated musical actions”

- Lucy Suchman (1987)’s introduced the term **“situated action”** to refer any action as being linked to the context where it happens (from a study on users using an expert photocopier system designed to help them).

- A “**situated musical action”** refers to any musical action related to a specific context (where we expect the VA to help us in that action within that context).

the system

ML tasks

1. Identify ML tasks.
2. Implement the ML tasks with suitable tools.
3. Test the implemented ML tasks.

1. Identify ML Tasks

Identify ML Tasks

- **Two tasks** identified (**supervised learning**):
  1. **NN-1** learns my musical taste when retrieving sounds from Freesound: do I like it or not?
  2. **NN-2** learns to reply (call-response) with another query based on the existing sound and my musical taste. The response can be based on pitch, bmp or similarity.
- **For each NN**:
  - Phase 1. **Training**.
  - Phase 2. **Testing**.

Identify ML Tasks

- **So far, task 1 implemented:**
  1. **NN-1** learns my musical taste when retrieving sounds from Freesound: do I like it or not?
  2. **NN-2** learns to reply (call-response) with another query based on the existing sound and my musical taste. The response can be based on pitch, bmp or similarity.
- **For each NN**:
  - Phase 1. **Training**.
  - Phase 2. **Testing**.

NN-1: Learning my musical taste

1. Creation of a dataset.
2. Identifying suitable feature descriptors that describe the sound.
3. Training a suitable machine learning model using a binary classifier based on a MLP neural network => *this results in the default model of the system.*

https://mirlca.dmu.ac.uk/posts/towards-learning-my-musical-taste/

2. Implement the ML tasks with suitable tools

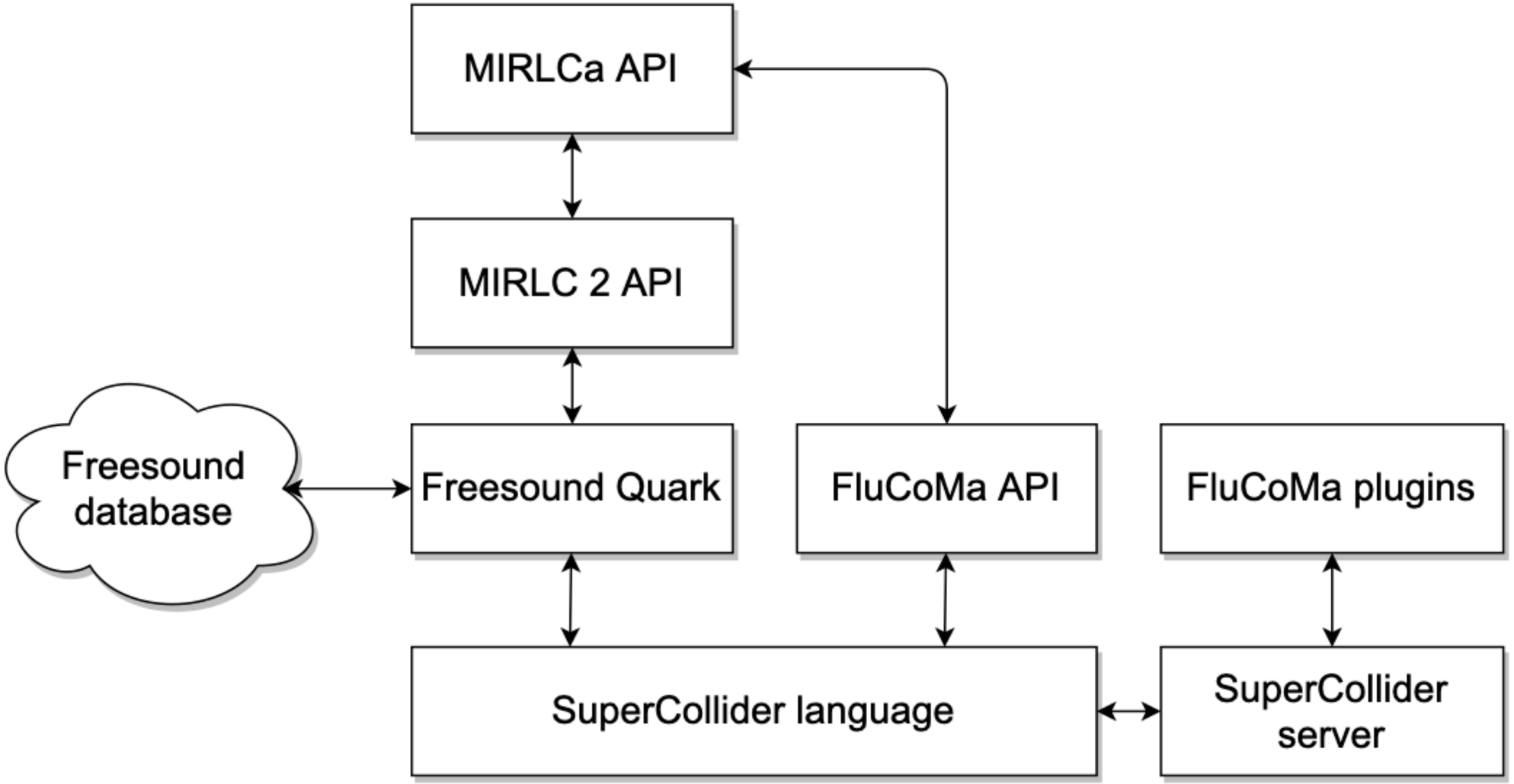
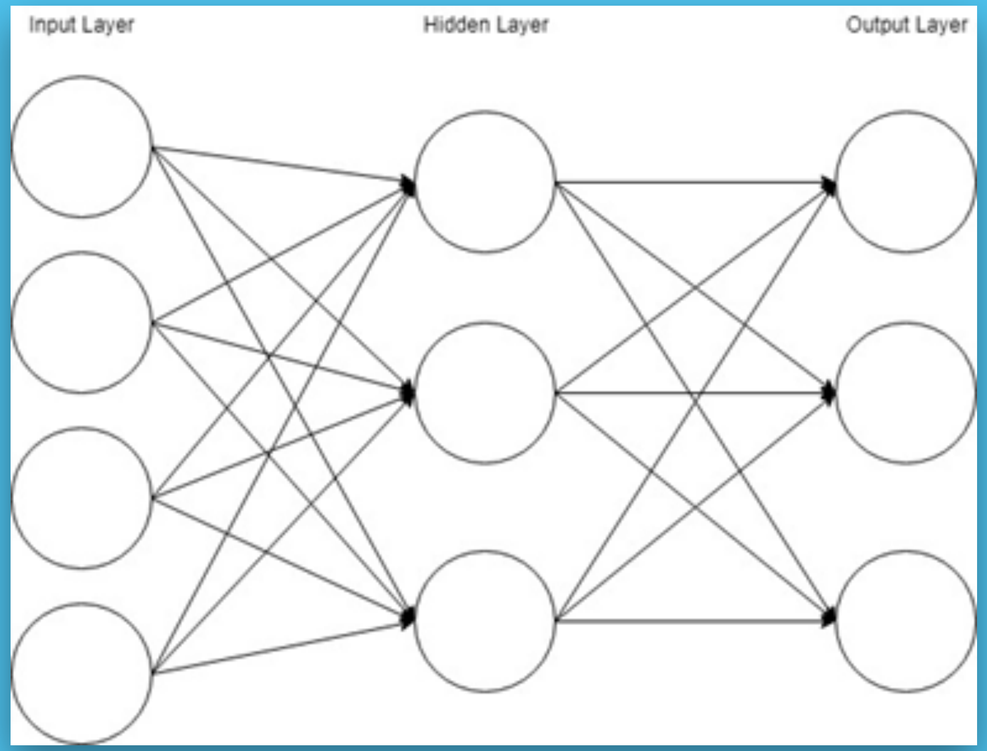


Diagram of the system's architecture.

Multilayer Perceptron



- Left: example of a multilayer perceptron (ML), which is a NN with an input layer, output layer, and **may have hidden layers** in between.
- A complex architecture suitable to learn regression and classification models for difficult datasets.

https://deepai.org/machine-learning-glossary-and-terms/multilayer-perceptron

best audio descriptors…

- First round with **9 descriptors:**
  - pitch, bpm, centroid, **flatness**, **pitch_confidence** (mean and variance).
  - **73% accuracy with flatness and pitch_confidence (mean and variance)**
- Second round with **26 descriptors:**
  - Mel-frequency cepstral coefficients (MFCCs) (mean and variance) + PCA
  - **76%-83% accuracy**

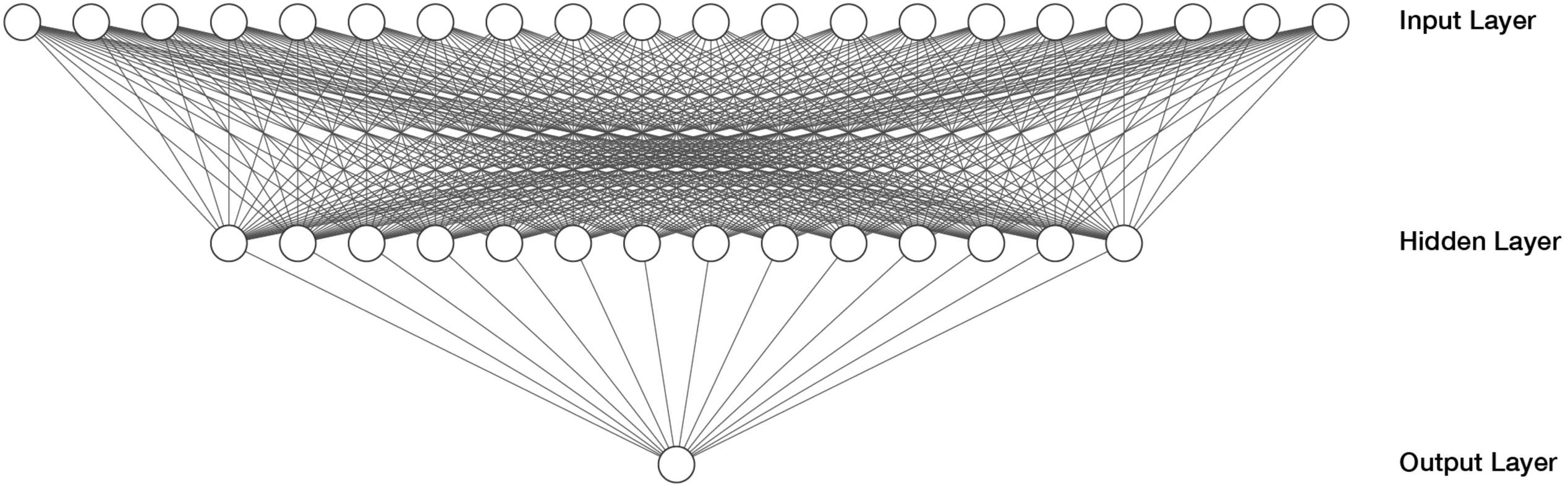
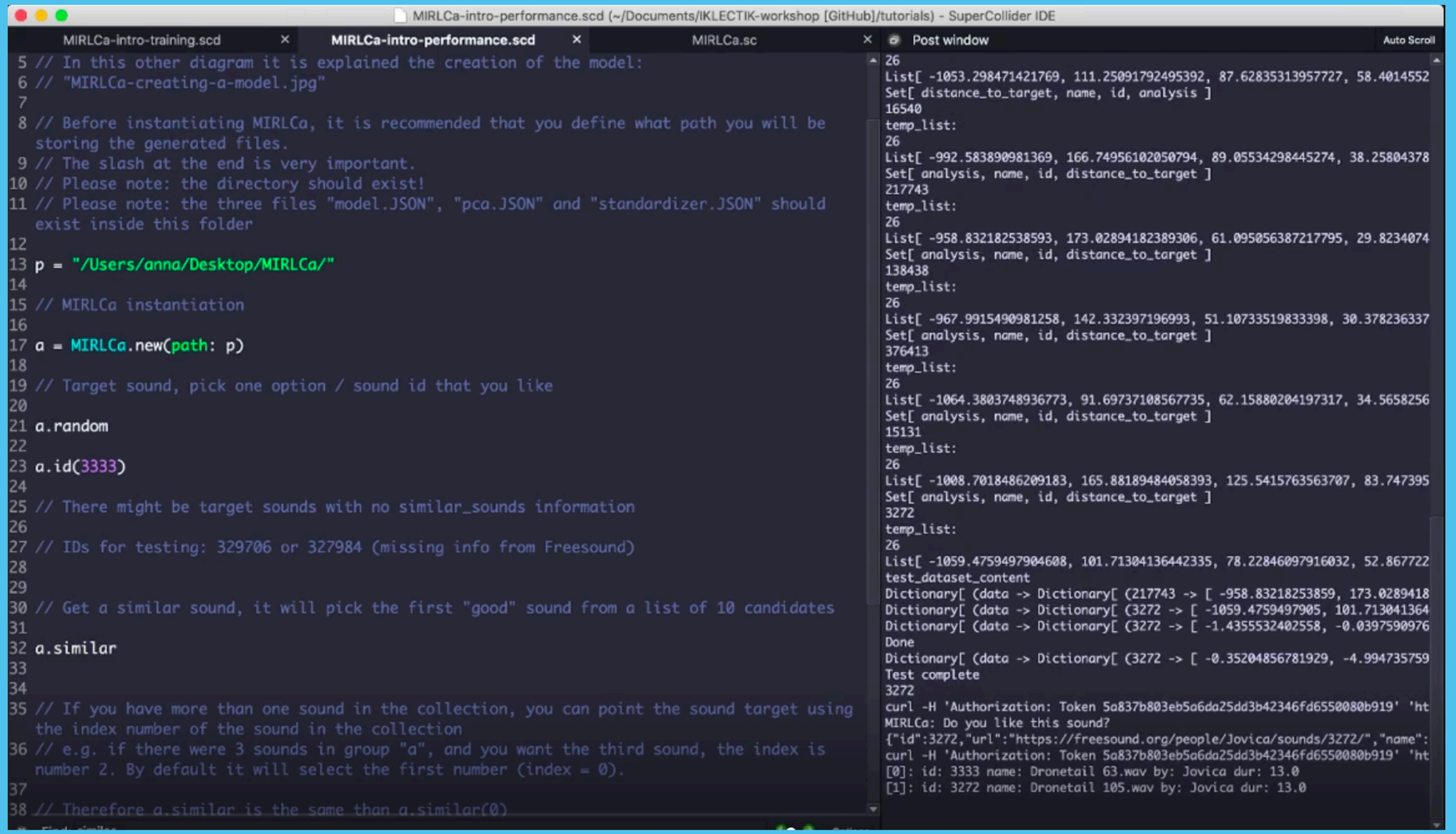


Diagram of the system's architecture.

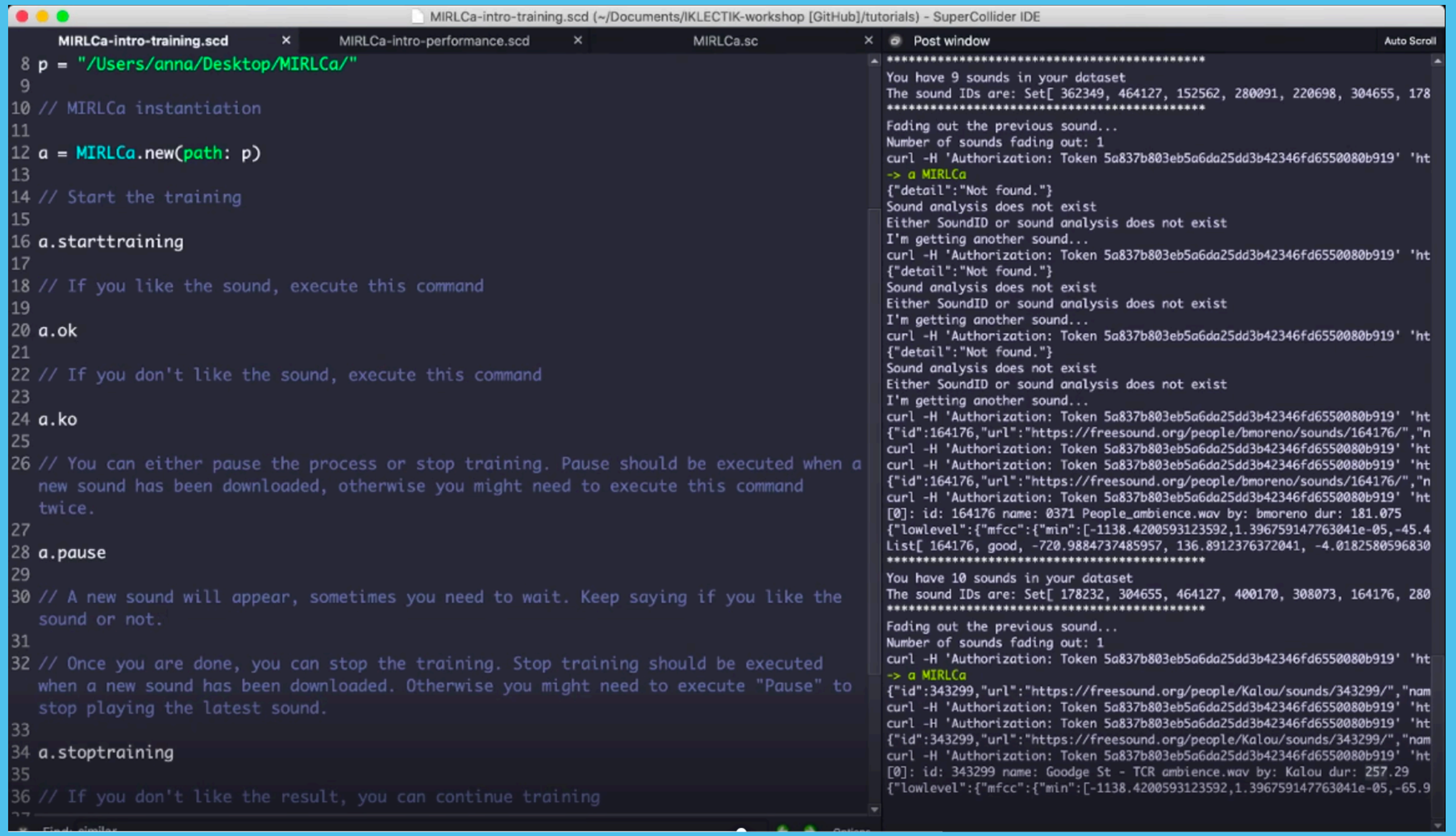
3. Test the implemented ML tasks…

Performance Mode



https://mirlca.dmu.ac.uk/tutorials/

Training Mode



https://mirlca.dmu.ac.uk/tutorials/

outreach

MIRLCAuto: A Virtual Agent for Music Information Retrieval in Live Coding

Partners: IKLECTIK, Leicester Hackspace, L'Ull Cec, Phonos, MTI²

Collaborators: TOPLAP Barcelona, FluCoMa, Freesound

Awarded with an EPSRC HDI Network Plus Grant

Online Workshop
Performing with a virtual agent: machine learning for live coding

London (IKLECTIK)
7/9/11.12.2020 - 19:00-21:00 (GMT)

Barcelona (L'Ull Cec)
11/13/15.1.2021- 19:00-21:00 (CET)

Leicester (Leicester Hackspace)
25/27/29.1.2021 - 19:00-21.00 (GMT)

More info at:
mirlca.dmu.ac.uk/workshops

Partners

IKLECTIK [off-site]

Collaborators

the workshops

- 3 workshops, ~20 attendees / workshop, 62 attendees in total.
    - 19 countries / 37 cities.
    - Mainly from Europe, but also from Asia, North America and South America.
- *Virtual* London (IKLECTIK), *virtual* Barcelona (l'ull cec), *virtual* Leicester (Leicester Hackspace).
- 3 sessions of 2h/session (on Zoom) + 1-2 project-based drop-in/help-desk sessions.
- Mini-lectures combined with demos and break-out groups.
- Instructors: Sam Roig and Anna Xambó.

learning outcomes

- Get a sense of the practice of live coding (music live performance using code) by manipulating online crowdsourced sounds and the automatic use of feature descriptors obtained from Freesound.org.

- Get familiar with the application of neural networks, in particular a multilayer perceptron used as a classifier, to improve the practice of live coding with crowdsourced sounds.

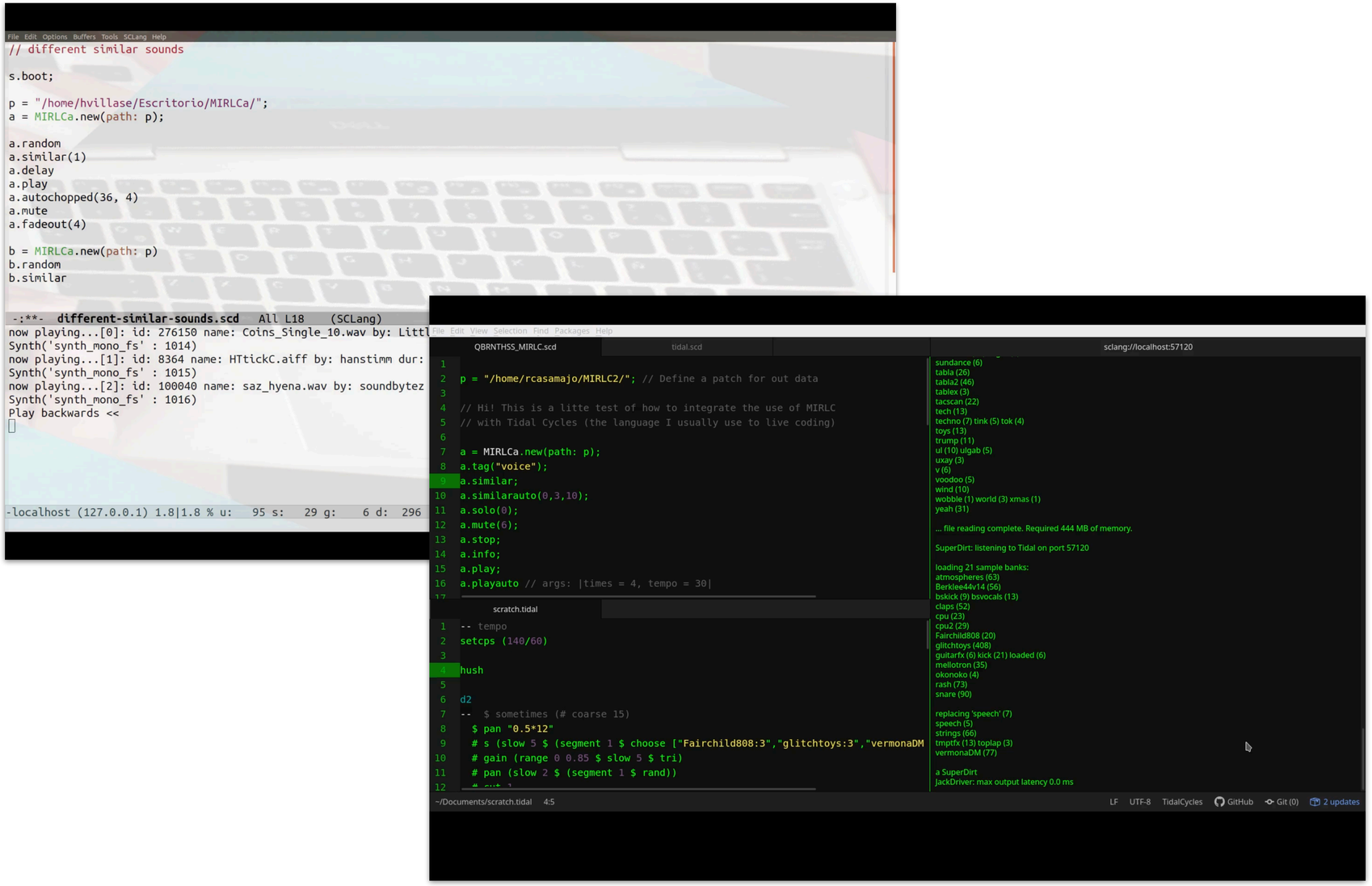
- Be exposed to the main steps to solve a problem using machine learning techniques: the creation of a dataset, training a model, testing the model, and performing with / evaluating the model in an iterative cycle.

- Understand how to combine different technologies in SuperCollider to build a prototype for live coding performance.

- Get insight on a participatory design approach to designing a prototype for live coding performance.

upon completion participants will be able to…

- Use SuperCollider and the MIRLC2 library to retrieve sounds from Freesound.org based on a live coding approach.
- Use a trained model using the FluCoMa library to retrieve sounds that are based on personal musical taste.
- Train your own model using the FluCoMa library to retrieve sounds that are based on your personal musical taste.
- Explore creative strategies to perform with a virtual agent using machine learning for live coding.
- Analyse how to define a virtual agent that can react to the live coder inputs using the FluCoMa library.



Collaboration with l'ull cec and Phonos in *virtual* Barcelona

Follow-up workshop: 4 special teasers in preparation

Follow-up concert with TOPLAP Barcelona (TBD)

This is the project website & blog of *MIRLCAuto: A Virtual Agent for Music Information Retrieval in Live Coding*, a project funded by the EPSRC HDI Network Plus Grant - Art, Music, and Culture theme.

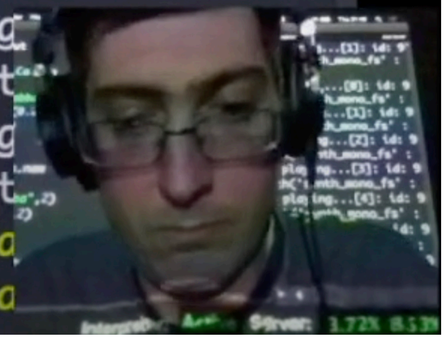
12. **Different Similar Sounds: An Interview with Ramon Casamajó** 04 Feb 2021 RESEARCH INTERVIEWS VIDEOS LIVE-CODING SESSIONS WORKSHOPS
11. **Diferents Sons Similars: Una Entrevista amb Ramon Casamajó** 04 Feb 2021 RESEARCH INTERVIEWS VIDEOS LIVE-CODING SESSIONS WORKSHOPS
10. **Diferentes Sonidos Similares: Una Entrevista con Ramon Casamajó** 04 Feb 2021 RESEARCH INTERVIEWS VIDEOS LIVE-CODING SESSIONS WORKSHOPS
09. **Different Similar Sounds: An Interview with Hernani Villaseñor** 28 Jan 2021 RESEARCH INTERVIEWS VIDEOS LIVE-CODING SESSIONS WORKSHOPS
08. **Diferentes Sonidos Similares: Una Entrevista con Hernani Villaseñor** 28 Jan 2021 RESEARCH INTERVIEWS VIDEOS LIVE-CODING SESSIONS WORKSHOPS
07. **Towards Learning My Musical Taste When Retrieving Sounds From Freesound** 28 Dec 2020 RESEARCH
06. **Welcome to Our New Collaborator: Freesound!** 07 Dec 2020 ANNOUNCEMENTS
05. **3 Online Workshops Announced!** 30 Nov 2020 ANNOUNCEMENTS WORKSHOPS
04. **Presentation at MUST5001 Aesthetics and Ideas in the Sonic Arts – November 25, 2020** 25 Nov 2020 OUTREACH PRESENTATIONS
03. **Welcome to Our New Collaborators: TOPLAP Barcelona and FluCoMa!** 24 Nov 2020 ANNOUNCEMENTS
02. **Presentation at Women in Art and Technology Meetup at NOTAM – September 21, 2020** 21 Sep 2020 OUTREACH PRESENTATIONS
01. **The MIRLCAuto project has started!** 24 Jul 2020 ANNOUNCEMENTS

IKLECTIK [off-site]

Collaboration with IKLECTIK in *virtual* London
Two performances and a Q&A panel with
Sam Roig (moderator), Iván Paz (panelist), Gerard Roma (panelist/performer), Anna Xambó (panelist/performer)
https://youtu.be/ZRqNfgg1HU0

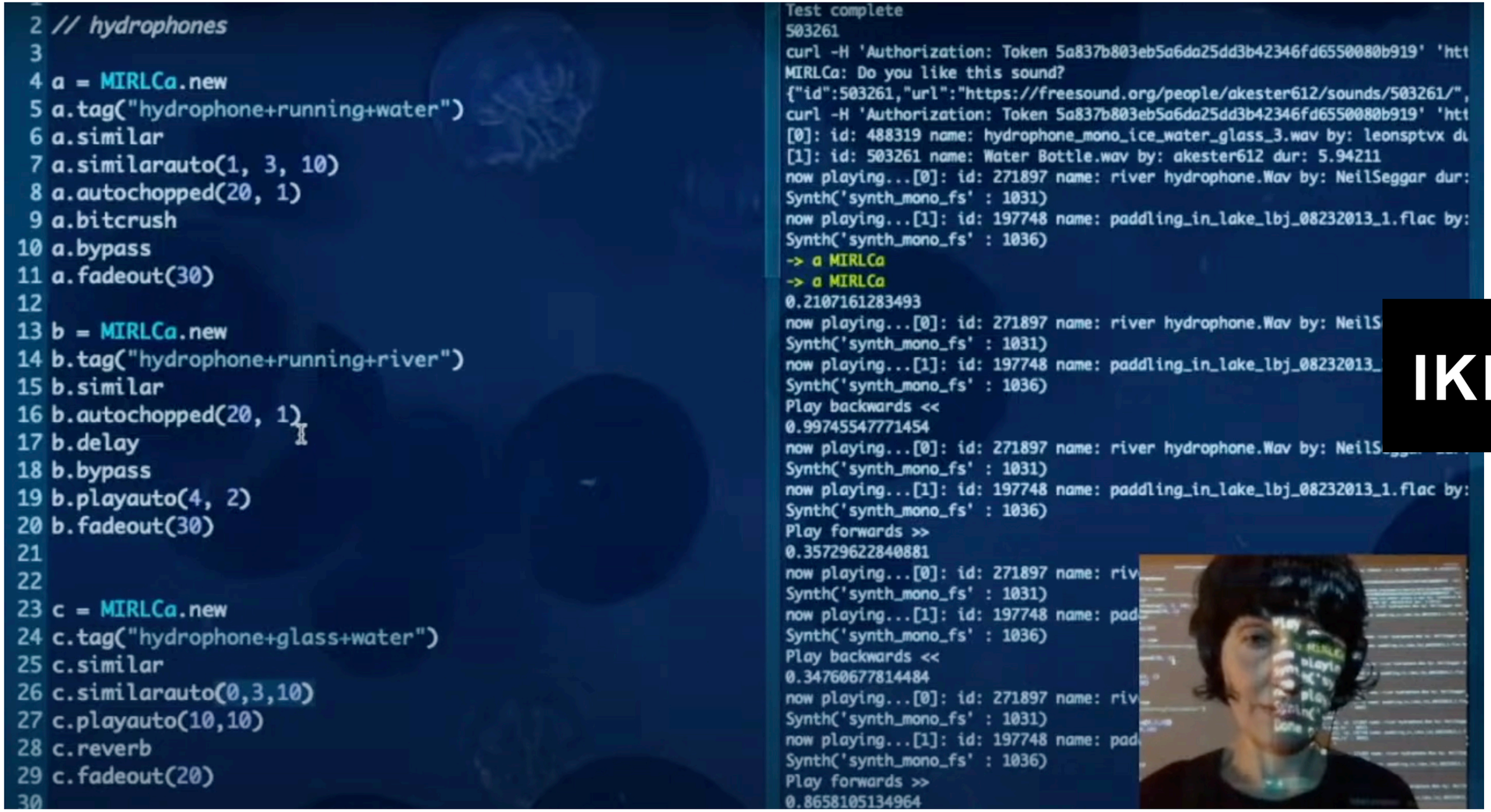
```
35 c.fadeout
36
37 d = MIRLCa.new
38 d.lowpf
39 d.tag("gabba",5)
40 d.volume(0.25)
41 d.play(1)
42
43
44 e = MIRLCa.new
45 e.lowpf
46 e.tag("gabba",2)
47 e.volume(0.2)
48 e.play(1)
49
50 f = MIRLCa.new
51 f.lowpf
52 f.tag("gabba",4)
53 f.volume(0.2)
```

```
now playing...[1]: id: 9
Synth('synth_mono_fs' :
-> a MIRLCa
now playing...[0]: id: 9
Synth('synth_mono_fs' :
now playing...[1]: id: 9
Synth('synth_mono_fs' :
now playing...[2]: id:
Synth('synth_mono_fs' :
now playing...[3]: id:
Synth('synth_mono_fs' :
now playing...[4]: id: 9
Synth('synth_mono_fs' :
now playing
Synth('synt
now playing
Synth('synt
-> a MIRLCa
-> a MIRLCa
```



IKLECTIK [off-site]

Collaboration with IKLECTIK in *virtual* London
Performance by Gerard Roma.
https://youtu.be/ZRqNfgg1HU0



IKLECTIK [off-site]

Collaboration with IKLECTIK in *virtual* London
Performance by Anna Xambó.
https://youtu.be/ZRqNfgg1HU0

a ML model, what for?

- **Music style**
- **Music preference** (Gerard Roma)
- **Different instruments** (Hernani Villaseñor)
- **Parts in the composition** (Iván Paz)
- **Snapshots of a musical biography/life journey** (Jonathan Moss)
- …

discussion

from workshops

- Sound-based music is not everybody’s cup of tea.
- MUSIC + AI is a broad, fuzzy term, which needs to be contextualised to avoid false expectations.
- Sound-based music and live coding is a niche, but it can inform other real-time artistic activities! Remember the 3 spec levels by Bill Buxton (1997): standard spec, military spec, and artist spec.
- Working with latest technologies is a challenge for both developers and participants, but it can become a fruitful conversation.
- Seeing the participants taking ownership and adapting the tool to their needs is the best reward!

from artistic practice

- It is possible to learn from a particular “situated musical action”.
- Flexible and suitable approach for different artistic practices.
- Integration of new methods to accommodate different artistic practices.

implications for HCI

- New hybrid methodologies combining practice-based and HCI methods.
- Expand the training to other situated artistic actions, context-based models.
- The artist spec!

future work

- Improve the training and performing modes.
- Support multi-user training of a single model.
- Enabling the integration of the tool in a wider range of workflows.

thank you!!!

https://vimeo.com/515416972