

Three Pidgins: Live Coding Performance

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ABSTRACT

We present *Three Pidgins*, a live coding musical performance as an example of the live coding systems created with *Sema*, a web audio-based technology. Using three bespoke mini-languages, Kiefer, Bernardo and Magnusson will collaborate on a co-located networked musical performance where music is live coded in real-time. Each of the languages serves as an instrument in the ensemble of three.

1. PERFORMANCE PROPOSAL

Live coding practitioners typically engage simultaneously in programming with a domain specific language (DSL) and other modalities, including audio and visual synthesis, instrument design, algorithmic creation, composition and performance [1].

Three Pidgins is a 10-minute performance that combines elements of improvisation and machine agency. This performance brings together and connects three live coding languages developed with our new system, *Sema*, which we will present in the main track of Web Audio Conference 2019 [2]. *Sema* enables users to define their own mini-languages and perform with them in a modern Web-based environment.

For *Three Pidgins*, we have created three distinct mini-languages that serve as instruments of a musical ensemble. We explore the extent to which these mini-languages enable an expressive live coding performance. In this performance and in the live coding style, the code and screens will be projected onto the wall, enabling the audience to follow the performance as it is played with the pidgin languages.

Magnusson, Kiefer and Bernardo are experienced improvisers, who will be performing as a trio for the first time with this performance. Magnusson and Kiefer are veterans of the live coding and algorave movement and have both previously developed their own live coding performance systems. Bernardo is a multi-instrumentalist and improviser, experienced in different musical genres and audiovisual media languages.

2. DOCUMENTATION

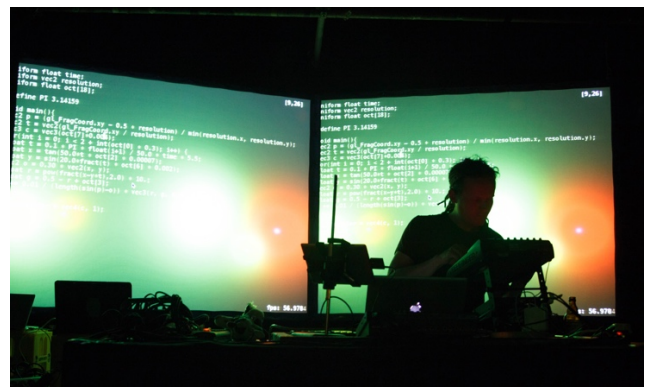
Three Pidgins will be publicly performed for the first time at the Web Audio Conference 2019. As such, there is no documentation of this performance. However, there is video-documentation of the idiosyncratic systems and languages that the participants of our first MIMIC Artist Summer Workshop developed with *Sema*, and performed with in a live coding event in Brighton.

3. PERFORMER BIOGRAPHIES.

Thor Magnusson is a worker in rhythm, frequencies and intensities. His research interests include musical improvisation, new technologies for musical expression, live coding, musical notation and digital scores, artificial intelligence and computational creativity, programming education, and the philosophy of technology. These topics have come together in the *ixiQuarks*, *ixi lang*, and the *Threnoscope* live coding systems he has developed.



Chris Kiefer is a computer-musician and musical instrument designer, specialising in musician-computer interaction, physical computing, and machine learning. He performs with custom-made instruments including malleable interfaces, touch screen software, interactive sculptures and a modified self-resonating cello. Chris is an experienced live-coder, performing under the name 'Luuma'. He performs with Feedback Cell and Brain Dead Ensemble, and has released music with ChordPunch, Confront Recordings and Emute.



Francisco Bernardo is a computer scientist, an interactive media artist, and a multi-instrumentalist. His research is focused on human-computer interaction approaches to toolkits that broaden and accelerate user innovation with interactive machine learning. Francisco has been working in applied research in projects at the intersection of art and innovation, human-centred machine learning, front-end software engineering, interaction design and greenfield product management. In his artistic practice, Francisco has been performing with different acts (e.g. FRANTICØ, :papercutz), and with his most recent solo project, MNISTREL.



Live Code Performances with Sema at MIMIC Artist Summer Workshop (<http://www.emutelab.org/blog/summerworkshop>):
https://youtu.be/3PKRDkaL_Nk
<https://youtu.be/Wt63531sWP0>
<https://youtu.be/-vU9Ka0RiLk>

4. TECHNICAL REQUIREMENTS

- 3 stereo DIs or an onstage mixer with 6 channels
- Ideally 3 projectors and screens or walls to be projected on – the cables need to reach the stage. If this is not possible, we'll find a workaround with one or two.
- 3 tables and chairs on stage

5. REFERENCES

[1] T. Magnusson. Herding Cats: Observing Live Coding in the Wild. *Computer Music Journal*, 38 (1):91–101, 2014.

[2] F. Bernardo, C. Kiefer, T. Magnusson. An AudioWorklet-based Signal Engine for a Live Coding Language Ecosystem. In *Web Audio Conference*, forthcoming.

6. ACKNOWLEDGMENTS

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7. LINKS

Sema: <https://github.com/mimic-sussex/sema>

MIMIC Project website: <https://mimicproject.com>

Thor Magnusson:
<http://www.sonicwriting.org>, <http://www.ixi-audio.net>

Chris Kiefer: <https://luuma.net/>

Francisco Bernardo:
<https://frantic0.com>, <https://mnistrel.com>