

Collaborative Live Coding with Glicol Music Programming Language

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ABSTRACT

Glicol is a graph-oriented live coding language developed with Rust, WebAssembly and AudioWorklet. This language can run in its web-based IDE that supports collaborative coding. In this performance, we invite the participants from the Glicol workshop to join the performance virtually. Each performer will be given the opportunity to write at least one musical loop, and the first author will be in charge of when to execute the code. The music style will be improvised experimental/ambient techno.

1. PERFORMANCE PROPOSAL

In this performance, all participants in the Glicol workshop will be invited to join together. By entering the same virtual ‘room’ in the Glicol web-based IDE, we will do collaborative coding to make music (see Figure 1).

Handling more than one page of code is not an issue for the Glicol audio engine but this can be less optimal for streaming via screen-recording. Thus, there will be some discussion in advance if the number of participants is too large. The first author of this proposal will be in charge of when to execute the code, as well as the screen-recording and streaming if necessary.

2. DOCUMENTATION

Since Glicol is a newly developed language, there is no prior performance documentation. However, we do have the experience with its precursor QuaverSeries [1] in the Web Audio conference 2019 performance where we adopt a similar solution for collaborating coding¹.

We have also recorded several videos to test the stability of the environment with a focus on its audio load shown in the Web Audio tool in the Google Chrome console².

3. PERFORMER BIOGRAPHIES

Qichao Lan is a computer-musician and researcher in music technology, specialising in audio programming, live cod-

¹http://webaudioconf.com/posts/2019_27/

²<https://bit.ly/3nUMYDH>



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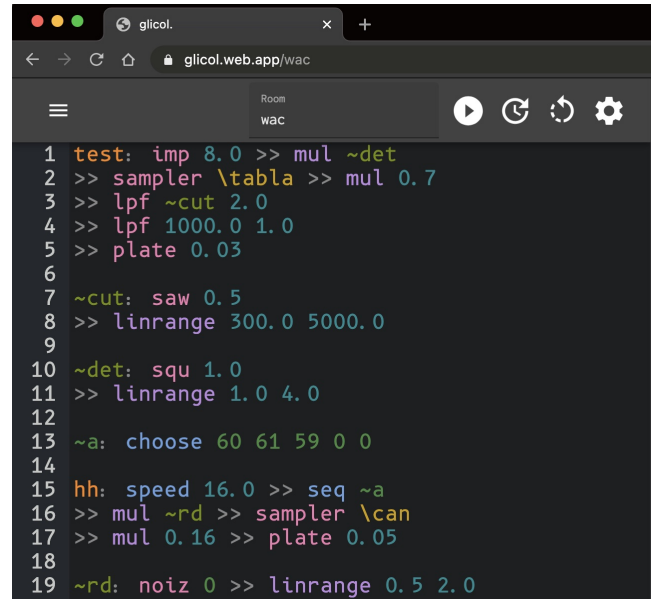


Figure 1: The current version of web-based IDE for Glicol. Performers can join the same ‘room’ for collaborative coding. Note that this screenshot is only for reference and the interface may change as the update of Chrome or Firefox may affect some interface dependencies.

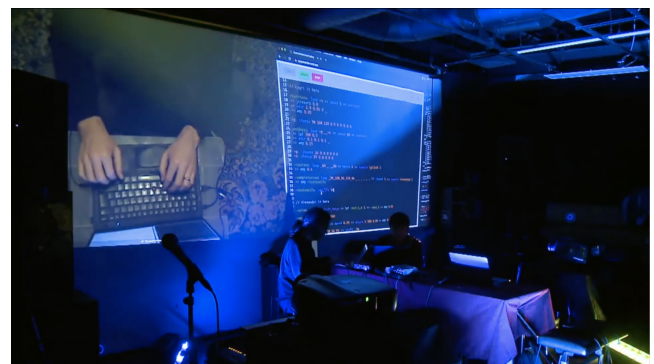


Figure 2: The authors engaged in a live coding performance during the Web Audio Conference 2019 in Trondheim. Here Glicol’s precursor QuaverSeries was used. Glicol inherits the syntax style and the collaborative environment of QuaverSeries, while most of the back-end has been redeveloped.

ing, new instrument design, and music AI. He is also publishing open-source software and performing live coding music under the name ‘chaosprint’. In 2018, Qichao gained his master’s degree in Sonic Arts at the University of Sheffield. Now, he is a doctoral research fellow funded by the Nordic-SMC organisation and works for the RITMO Centre at the University of Oslo. He is currently focusing on developing a new programming language called Glicol which can be used for live coding music performance, music AI research and STEM education.

Alexander Refsum Jensenius is a music researcher and research musician. His research focuses on why music makes us move, which he explores through empirical studies using different types of motion sensing technologies. He also uses the analytical knowledge and tools in the creation of new music, with both traditional and very untraditional instruments. As chair of the NIME steering committee, he is a leading figure in the international computer music community. From 2017 he co-directs RITMO Centre for Interdisciplinary Studies in Rhythm, Time and Motion, an interdisciplinary centre of excellence at the University of Oslo. As a member of the EUA Expert Group on Science 2.0/Open Science, he is also involved in pushing for modernising the way research is conceived and conducted.

4. REFERENCES

- [1] Q. Lan and A. R. Jensenius. Quaverseries: A live coding environment for music performance using web technologies. In *Proceedings of the International Web Audio Conference (WAC)*, pages 41–46. NTNU, 2019.