

Web Audio in Contemporary Music: Browser Sound Festival

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ABSTRACT

We present Browser Sound, a festival for web-based music and sound art. Our vision is for web audio to become a ubiquitous tool and aesthetic influence in the contemporary music community. We seek to achieve this by producing projects typical to the contemporary music ecosystem (such as concerts, commissions, and workshops) while keeping web audio tools as available as possible. Our artists and audience have backgrounds both in contemporary music and creative coding, and represent a wide range of professional experience, including professional software developers, artists with no coding experience, professors of music technology, and web developers with little prior experience in audio.

1. INTRODUCTION

Browser Sound¹ is a festival for web-based music and sound art based online and in Stuttgart. Launched in 2020, the festival commissions new works of art, hosts workshops for artists and developers, and holds a two-day festival in Stuttgart every two years.

Browser Sound's vision is for web audio to become both a ubiquitous creative tool and an aesthetic influence in the contemporary music community. That is, web audio technology would fit into the contemporary music ecosystem in a similar way as composing music for violin, programming a patch in Max MSP, creating a graphic score or other common artistic practices. We seek to achieve this by centering web audio technology in standard contemporary music frameworks such as commissions, concerts, festivals, and workshops. We argue that this increases the accessibility of web audio technology for artists and provides a

platform for those with practices in web audio to exchange work and ideas.

In this paper, we first describe the barriers of separation between contemporary music and creative web audio practices, and propose a structure for curation, commissioning, performance, and discussion that removes these barriers. We then describe how Browser Sound has implemented this structure and make conclusions on the impact and future direction of our project.

2. WEB AUDIO & CONTEMPORARY MUSIC

Many opportunities for artistic exchange in web audio already exist.² Browser Sound's initiatives are not intended to fill a hole in the web audio community, but rather to remove barriers of separation between creative platforms in the web audio community and those of contemporary music.

2.1 Contemporary Music Ecosystem

By "Contemporary Music", we refer not to a particular musical style (as there is no central style in contemporary music at the moment), but rather to a specific community of people and institutions.³ Specifically, a large percentage of contemporary music initiatives follow a typical lifecycle for artistic exchange: Commissions, Compositions, Performance, and Discussion (see figure 1).

One major characteristic of this lifecycle is that each stage can be (though it is not required to be) defined as a specialized role taken by a single individual: Curator, Composer, Performer, Teacher (see figure 2).

¹ <https://browsersound.com>

² See Mann, Rhizome, and Schiffman in the endnotes for communities that make tools, archive, and educate in web audio.

³ Defining the contemporary music community is a larger conversation with many different opinions. However, many would agree that a large percentage of the contemporary music community is made up of artists with a connection to an academic music department. Though there is a large network of contemporary music concerts, festivals, collectives, and artists that are not connected to higher education, academic music departments function as a primary gateway for introducing artists to this community. Perspectives on this topic from the angle of western classical music, race, and gender can be found in the endnotes under Grüny, Kendall et al., and Lim, respectively.



These specialized roles are an integral aspect of the contemporary music community. Though it is not necessary for a contemporary music artist to identify with just one single role, the community maintains space for each role to exist distinctly from one another.⁴⁵

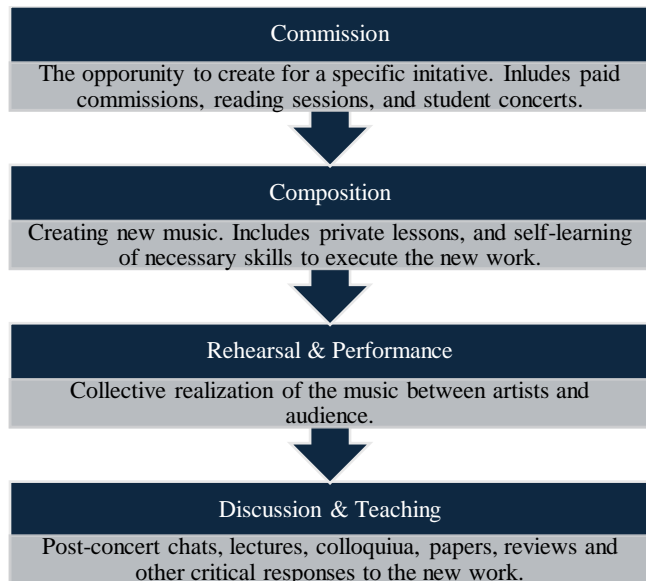


Figure 1. A typical lifecycle for a new work of contemporary music

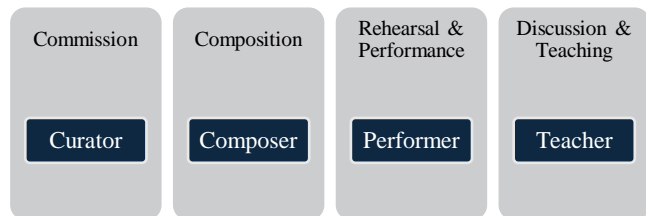


Figure 2. Defining the contemporary music lifecycle in terms of individual roles

2.3 Barriers Between Contemporary Music and Web Audio

This structural separation of roles echoes a form of artistic collaboration common to western classical music. However, it is not any more or less privileged in spaces that work with web audio. In this way, the contemporary music community does not have many access points for web audio technology to enter in. Web audio technology is not primarily a tool for performers, composers, curators, nor teachers, and thus is also not in the standard training for any of these roles. Additionally, artists in contemporary music may also be discouraged from engaging with web audio simply from a lack of experience in coding.

⁴ The hyphenated naming conventions of many contemporary music artists can be seen as a manifestation of this. Roles such as composer-performer, composer-technologist, or simply identifying in multiple roles (e.g. [name of artist] is a composer, teacher, and curator) are commonplace in contemporary music,

Browser Sound’s festivals seek to contextualize web audio with access points familiar to the contemporary music artist. In other words, we build our festivals in the mold of the contemporary music lifecycle to encourage artists with little programming experience to participate. At the same time, we take care to build in pathways for experienced artist/developers to create and exchange their work.

3. IMPLEMENTATION

Browser Sound’s 2021 and 2023 festivals invited artists and developers both experienced and beginner to be commissioned, to compose, to perform, and to discuss creative web audio work.

3.1 Browser Sound 2021: Online

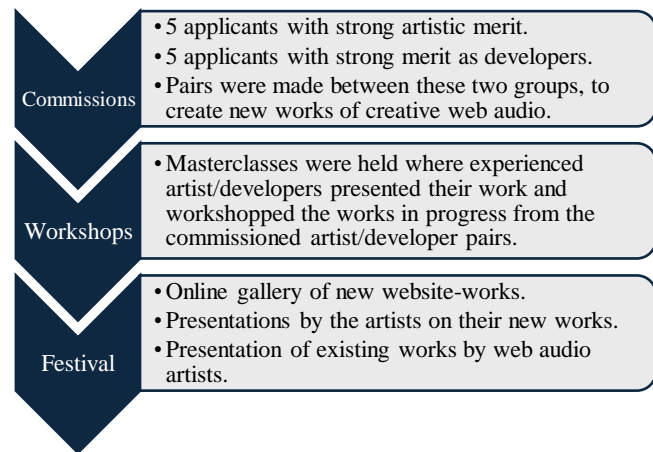


Figure 3. Overview of Browser Sound’s 2021 Festival

Our 2021 festival occurred entirely online (a theme aligned not only with web audio, but also with the Covid-19 pandemic). We had a single track put artists and developers of differing experience levels together in direct collaboration to create new works for website. Each new work was a collaboration from at least 1 artist chosen from a call for “artists” and 1 chosen from a call for “developers”.

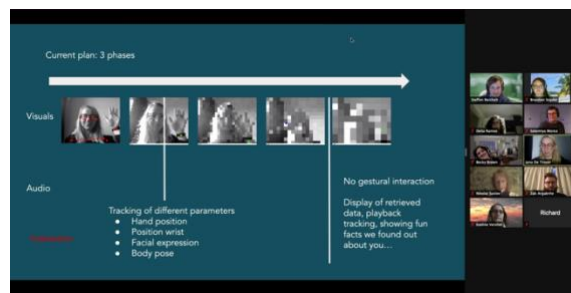


Figure 4. A Work-in-Progress being presented in workshop.

whereas this overlapping of roles goes more-or-less unspoken in other musical communities.

⁵ The common study programs for contemporary music in higher education also encourages this specialization - music theory and musicology for curation, composition for composing, and contemporary music performance for performance.

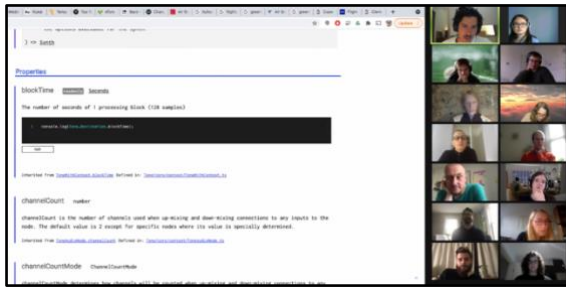


Figure 5. Yotam Mann presenting a Tone.js workshop

3.2 Browser Sound 2023: Location Sharing

In contrast to 2021, Browser Sound’s 2023 festival had 3 separate tracks.

Commissions Track

- Call for proposals for 4 new works that incorporate web audio in a hybrid (online & in-person) musical work.
- The 4 new works were premiered at festival, and the artists also gave a conference-style presentation the day after.

Presentations Track

- Artists and developers with existing projects in web audio presented in a pair of conference-style events.

Workshop Track

- A 6-part online workshop "JavaScript for Sound Artists" was given for artists with little to no programming experience.
- Workshop participants presented their work at a reading session at the festival.

Figure 6. Overview of “Location Sharing”, Browser Sound’s 2023 Festival



Figure 7. Poster for Browser Sound 2023: Location Sharing

“Location Sharing” took place both online and in Stuttgart, and centered on web technologies that play a role in both online and physical-world experiences.

4. IMPACT

4.1 Web Audio Accessibility

In these two festivals, we felt an important measure for measuring the accessibility of web audio in a contemporary music community space was to have participants representing both the beginner and advanced levels of web audio competency.

In our 2021 festival, we sought this out by explicitly asking in our call for artists that applicants describe their artistic and programming backgrounds, and then selecting two groups of applicants: 5 with strong artistic merit and 5 with strong merit as developers. We found that among these resulting two groups, most of the selected artist/developers (8 out of 10) already had some sort of hybrid practice of making artistic work with code. Additionally, among the 5 commissioned works, a fair number of them (3 out of 5) were created with the artist/developer pair taking on both roles of “artist” and “developer” in equal parts.

This led us to change our commissioning structure in 2023 which relied not on an artist’s self-reported identification as artist or developer, and more on the merits of a proposal they submitted. Because of this, the commissions in 2023 were all awarded to artists with an existing practice of using web audio. Anticipating this shift in applicant demographic, we shifted to focus of our workshops towards artists with little to no programming experience.

4.2 Workshops

The 2021 workshops were comprised of experience web-art artists who gave masterclasses on their work, and the works-in-progress of our commissioned artist/developers. The content of these workshops was primarily on the aesthetics of web art, and our audience was full of a wide range of composers, performers, and creative coders.

In 2023, we gave a single 6-part workshop that taught JavaScript fundamentals and the p5.sound library. This attracted both amateur and professional artists, most of whom had little experience in web development (though several were highly experienced in digital signal processing). This was primarily a technical workshop, and in future iterations, we are interested in creating a larger, more holistic workshop that covers both technical and artistic concerns of web development.

In addition to the workshops and concert of commissioned works, our 2023 festival had two conference-style “Show and Tell Sessions”, where a selection of artists and developers presented existing projects in web audio, including works of VR (Jonathan Bell), curatorial projects (WebSoundArt), video games (Scorecraft), and professional artist tools (scorefol.io).

4.3 Future Festivals

Workshops have been one of the easiest and strongest initiatives for Browser Sound to produce, as we have found the community of artists experienced in web audio to be eager to connect and work in a pedagogical context. On the other hand, producing concerts, especially in a hybrid format, has proven to be a bottleneck on Browser Sound’s ability to scale. For this reason, we are interested exploring partnerships with larger festivals, conferences, and workshops, as a possible future project.

5. APPENDIX

5.1 List of Commissions

In 2021, Browser Sound commissioned 10 artist/developers to work in pairs and create 5 new works each in the form of a website.

In 2023, Browser Sound commissioned 4 new works around the theme of “location sharing”, integrating web audio into a new work of any medium that would be premiered both in-person and online.

Table 1. Works Commissioned by Browser Sound

Title	Composer(s)	Medium	Year
fold	Ted Moore	Trio of in-person and online musicians, video, electronics	2023
aliasingxaliasing	Evelin Felix Lindberg, Steffen Reichelt	AR & VR sound installation	2023
practice makes	Becky Brown	Static webpage; sound walk	2023
something	Brandon Lincoln Woo Snyder	Social media performance across 4 Instagram accounts	2023
Data, please!	Jana De Troyer, Steffen Reichelt	Static webpage; motion tracking web installation	2021
ANTI – A Netart Theory of Identity	Carla, Rapo	Live performance & static webpage	2021
Vyshyvanka.js	Solomiya Moroz, Curt Miller	Static webpage	2021
THIS IS NOT A CONCERT	Delia Ramos Rodríguez, Nikolay Suslov	Collaborative Live Coding Space	2021
Firewood, Corn, Weaving	Brandon Lincoln Woo Snyder, Christian Espinosa Schatz, Ethan Lee, Henry Sales, and others	Mobile web app	2021
PACKETSPHERE: An Internet Travelogue	Becky Brown, Zak Argabrite	Static webpage; Experimental fiction	2021

5.2 List of Workshops

Across its two festivals in 2021 and 2023, Browser Sound held 3 standalone workshops on web-art aesthetics, as well as a 6-part course on JavaScript for artists and non-developers.

Table 2. Workshops by Browser Sound

Presenter	Workshop	Year
Brandon Lincoln Woo Snyder	JavaScript for Sound Artists (in 6 parts)	2023
Yotam Mann	Tone.js	2021
Nicolas Zupfer	Experimental Graphic Design	2021
Laurens Inauen	Generative Music Aesthetics	2021

6. ACKNOWLEDGMENTS

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