Somatic and somaesthetic design practices in NIME

Sharing experiences, methods, tools, and concepts

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Somatic and somaesthetic perspectives have increasingly become a part of the NIME community in recent years. In particular, many practitioners within NIME (and beyond) have adopted techniques, concepts, and tools from soma design—a methodology that centers the focus of design on the soma, i.e., the body, the lived experience, and first-person perspectives on embodied phenomena. In this workshop, we aim to gather with artists, designers, researchers, musicians, and creative practitioners at NIME to provide them with a platform to: (1) learn about soma design in NIME and musicking through our two keynotes, and group of expert panelists, (2) share their experiences of employing somatic/somaesthetic techniques to guide their creative choices, and how they are producing knowledge in the form of methods, tools, and concepts in this space, and (3) network with other like-minded researchers and practitioners who share a common body-centric perspective on design, interaction, and performance.

Additional Key Words and Phrases: soma design, DMI design, embodiment, performance practice, bodily experience, body-centric perspectives

1 Introduction and Motivation

Soma design is an emergent design method that focuses on designing with somaesthetic appreciation [16], i.e., by harnessing the first-person perspective and lived experience of phenomena as a design resource. It originated from the somatic turn in the Human-Computer Interaction (HCI)/Interaction design (IxD) communities [12], initially proposed by Kristina Höök [8]. Since its inception, it has rapidly permeated a wide range of application domains, such as household items [17], health and well-being [4], interactions with robots and drones [11], and the arts, including the sonic arts [3], dance [15], and biofeedback-based artworks [10]. Within NIME research and musicking practices, it has been explored in, including but not limited to, the following domains: instrument design, singing, live performance, improvisation, and accessibility [1, 2, 5–7, 13].

On its own, soma design also constantly expands its design palette to include techniques from other design approaches and discourses, such as micro-phenomenology [14], and embodied design ideation (e.g., defamiliarisation) [18]. In this way, soma design is influenced by artistic practices (both somatic and non-somatic), just as it is influenced by turns in HCI and expanded upon by its practitioners. In this workshop, we aim to explore how practitioners of soma design as well as other somatic and somaesthetic practices—or overall, people from the NIME community interested in this space—are actively contributing to the expansion of these practices. These practitioners expand the existing soma design framework by adopting its methods, tools, and concepts, but also through adaption of these existing methods and by creating new ways of engaging with them in the context of NIME design and musicking practices. We hope that this workshop serves as a creative space to build, strengthen, and expand upon existing threads of work and collaboration in these areas.

In the following sections, we provide further detail on the workshop's structure and schedule, as well as organizers and speakers. We also provide a boilerplate workshop description to be used in the NIME 2025's workshops program and details on our prospective call for participation, which we will distribute across the NIME mailing list and other music technology and design-related networks to invite the community at large.

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NIME '25, June 24–27, 2025, Canberra, Australia

Parts	Activities	Duration	AEST	CEST	PDT
Part 1	Introduction + Ice breaker	25	13:00	05:00	20:00
	Opening Keynote + Q&A	45	13:25	05:25	20:25
	Break	5	14:10	6:10	21:10
Part 2	Position cases	30	14:15	06:15	21:15
	Break	15	14:45	06:45	21:45
Part 3	Panel + Q&A	50	15:00	07:00	22:00
	Break	10	15:50	07:50	22:50
Part 4	Group Ideation Canvas Rounds	2 x 10	16:00	08:00	23:00
	Break	5	16:20	08:20	23:20
	Group Ideation Canvas Rounds	2 x 10	16:25	08:25	23:25
	Plenary	15	16:45	08:45	23:45
	Break	5	17:00	09:00	00:00
Part 5	Closing Keynote + Q&A	45	17:05	09:05	00:05
	Conclusion + Networking	10	17:50	09:50	00:50
	End		18:00	10:00	01:00

Table 1. Planned Workshop Activities and Schedule

2 Workshop Description

In this workshop, we will explore soma design approaches within and beyond NIME research that can potentially contribute to NIME design and performance practices, as well as provide opportunities for conversation and networking among like-minded researchers and practitioners who share a common body-centric perspective on design, interaction, and performance. The workshop is structured as a "mini-symposium", including a keynote presentation and a panel of speakers who are experts on soma-based design and performance. The main goal of inviting these talks is to provide attendees who are interested in this space, or are already experienced in it, with an opportunity to be presented with different perspectives of how to apply somatic and somaesthetic methods in musicking, as well as different experiences of adopting and adapting these methods, their tools, and emerging concepts, as well as creating new instances of these. Participants will also have an opportunity to optionally present and share their work with others through "position cases" which, in contrast to position papers, will be accepted in a diversity of formats such as: extended abstract, video abstract (to facilitate remote asynchronous participation), or instrument/technological demo. However, attendees are not required to enter a position case to participate in the workshop. We will also facilitate a hybrid ideation canvas activity, where participants will write down their ideas on sticky notes in groups for a series of rounds, with the aim of eliciting input from the community on employing somatic/somaesthetic techniques in their practice across a four categories, namely, experiences, methods, tools, and concepts.

3 Workshop Structure

The workshop will span five hours and is divided into five parts (see Table 1). The format will be hybrid as our keynote and three panel speakers will join remotely from Europe. The workshop activities will be organized as detailed in the following sections.

3.1 Part One - Introduction and Opening Keynote + Q&A

The first part of the workshop will be a general introduction from the organisers, who will introduce themselves—and other organisers who will be joining in later remotely. We will also introduce the motivation of the workshop, as well as a brief soma design "primer", addressing what the somatic and somaesthetic methods we are looking at are, as well as their terminologies, and approaches. We will also present the workshop's schedule at this time. In addition, we will conduct an ice-breaking activity for attendees to introduce themselves to others, in a fun and memorable way.

After the ice breaker, we will have an opening keynote by Lian Loke who would talk about her body-centred artistic works and human-centred design approaches to interactive technologies and spaces. Further details on the keynote are to be confirmed, although Lian has confirmed her attendance as keynote speaker.

3.2 Part Two - Position Cases

After a short break the attendees who have brought a position case will be presenting their work in the form of a short oral presentation, a demo, or a video. The presentation of position cases section will allow participants to familiarise themselves with each other's research and performance practices and situate their work in relation to the soma design framework.

We will gather information about who has submitted a case through a prior form we will also use to manage attendance numbers. Thus, the time allocated to each presenter will vary according to the number of submissions. If there are no submissions we will still encourage attendees to share something in the form of an application of the methods, tools, or concepts.

3.3 Part Three - Panel session + Q&A

Part three will feature a panel composed of some of the workshop organizers, namely, Courtney Reed, Kelsey Cotton, Mary Mainsbridge, and Tove Grimstad Bang. Each panelist works with different topics at the intersection of soma design and NIME research. They will present their research topics, methods, artifacts, and experiences through 5-minute-long presentations. The panel presentations will be followed by questions from both the workshop participants and curated by two moderators (i.e., Doga Cavdir and Juan Martinez). This session will provide the participants with opportunities to learn about, relate, and adopt soma design methods in NIME to their own research and domains.

3.4 Part Four - Group Ideation Canvas Rounds

In this part, we will facilitate a group ideation canvas activity in which participants will be divided into groups to populate a canvas with four categories, namely, (1) "experiences": i.e., applications of soma design, in the form of design practice, performance, art piece or instrument, among others; (2) "methods": i.e., applications of existing soma-based methods (e.g., "defamiliarisation" [18]), adaptation or re-interpretation of existing methods, and/or formulation of new ones; (3) "tools": i.e., applications of existing soma-based tools (e.g., soma bits [19]), adaptation or re-interpretation of existing tools and/or formulation of new ones; (4) "concepts": i.e., applications of existing soma-based concepts (e.g., "intimate correspondance" [17]), adaptation or re-interpretation of existing concepts, and/or formulation of new ones. For each category, participants will have 10 minutes to discuss in groups and populate each corresponding canvas section with ideas written on sticky notes. Organizers who are attending remotely will support the facilitation of this activity in its online version. Similar to the in-person activity, participants will collectively articulate their ideas on digital sticky notes and post them on a canvas on a Miro board [1]. Groups of online attendees will be distributed across breakout rooms in Zoom. At the end of this activity we will have brief plenary discussion on the results of the canvas.

3.5 Part Five - Closing Keynote + Q&A and Conclusion

The last part will feature a keynote from Professor Kristina "Kia" Höök, author of *Designing with the Body* [9], and original proponent of the somaesthetic interaction design method. In her keynote, tentatively titled "Soma designing with the body — music, tools and creativity", Kia will introduce the methods and practices they have used in their research and demonstrate their functionality and adaptability to NIME research. She will reflect on the overlapping practices between embodied music interaction and soma design, comparing somaesthetic engagement in music and design.

Due to time zone differences, the keynote may be pre-recorded if the early morning presenting time does not suit the speaker. The talk will be presented to the in-person participants during the workshop. Regardless, the keynote will be recorded for it to be distributed to online participants in different time zones to access asynchronously. Kia will attend the Q&A session live following her keynote. The keynote and Q&A will last for 45 minutes in total. Kia has confirmed her participation in our workshop as keynote speaker.

We will conclude the workshop with a networking activity, in which attendees will have a chance to break into conversation and share contact details.

3.6 Post Workshop Activities

We will record the keynote, panel presentations, and the following discussions. Along with the results of the workshop group activities, these recordings will be shared with the participants with the permission of the invited speakers. The resulting canvas rounds will be collected and distributed on the workshop's website (see Section 7).

Beyond exploring existing and new research methods, tools, and concepts in soma design and music, this workshop aims to bring the soma design and music communities closer.

[1] https://miro.com/

4 Organizers and Invited Speakers

In this section we provide further details about our organizers and invited speakers' backgrounds and biographies. We also provide a short teaser for Kristina Höök's keynote. Abstracts for her keynote as well as the panel speakers' presentations will be provided at a later time (upon acceptance of this submission) in the workshop's website (see Section 7).

4.1 Invited Speakers

4.1.1 Opening Keynote Speaker. Lian Loke will give an in-person keynote presentation on her somatic and artistic practices. Further details on her keynote are yet to be confirmed although she has confirmed her attendance as an opening speaker.

Lian Loke is an artist, designer, educator and researcher, with the body as the central focus of her interdisciplinary practice. She is interested in exploring how new technologies are impacting on the lived body and its possibilities for expression, transformation and transcendence. Her work explores the creation of body-centred artistic works and human-centred design approaches to interactive technologies and spaces. She combines dance, design, human-computer interaction and the aesthetics of interaction to critique and produce concepts, systems and performances. Her enduring interest in dance and kinaesthetic imagination drives creative research into the kinetic expression of machines, with current projects exploring how human and robots can collaboratively interact through movement, gesture and touch. She has a background and PhD in design, human-computer interaction and software engineering, with extensive experience as an educator and researcher. She researches and teaches interaction design. She is an Associate Professor in the School of Architecture, Design and Planning, The University of Sydney. She was Director of the Master of Interaction Design and Electronic Arts program (2013-2020) and Head of Design (2021).

4.1.2 Closing Keynote Speaker. Kristina Höök will give an online keynote presentation titled "Soma designing with the body — music, tools, and creativity," describing the soma design framework and reflecting on the overlapping practices between embodied musical interaction, soma design, and somaesthetic engagement in design and music.

Kristina Höök is a professor in Interaction Design at the Royal Institute of Technology and also works part-time at RISE. Höök has published numerous journal papers, books and book chapters, and conference papers in highly renowned venues. A frequent keynote speaker, she is known for her work on social navigation, seamfulness, mobile services, affective interaction, and lately, designing for bodily engagement in interaction through soma design. Her competence lies mainly in interaction design and user studies helping to form design. She has obtained numerous national and international grants, awards, and fellowships including the Cor Baayen Fellowship by ERCIM (European Research Consortium for Informatics and Mathematics), the INGVAR award, she is an ACM Distinguished Scientist and elected ACM SIGCHI Academy. Höök is a horseback rider, mother, grandmother, and feminist.

4.1.3 Panel Speakers. A panel will be formed among some the workshop organizers who work on different aspects of soma design in their research with musical interaction and expression, namely, Mary Mainsbridge, Kelsey Cotton, Courtney Reed and Tove Grimstad Bang. This panel will open the conversation to the participants, introducing the speakers' methods, sharing insights, and exploring future directions of soma design for music HCI together with the participants.

4.2 Organizers

The workshop will be organized by researchers who work at the intersection of HCI and NIME, applying body-centric methods to design and performance.

Juan Pablo Martinez Avila [he/him] is an Assistant Professor in Computer Science at the University of Nottingham. His research interests span digital musical instrument design, soma design, and ethnography. His current research is focused on the impact of soma design in musicking, as well as intelligent instruments, leading this thread of work in the "Somabotics: Creatively Embodying AI" Turing Fellowship project by Steve Benford.

Doga Cavdir [she/her] is a sound and performing artist and an HCI researcher. Her research and artistic process actively engages with kinesthetic, immersive, and shared experiences for inclusivity as a way to bridge diverse abilities. At the intersection of feminist and crip theory, her research examines the intercorporeality of bodies and technology and material experiences in music and dance. She currently works as an Assistant Professor in Digital Design and HCI at IT University of Copenhagen in Denmark.

Courtney Reed [she/her] is a semi-professional vocalist and HCI researcher. She works as a Lecturer (Assistant Professor) in the Institute for Digital Technologies at Loughborough University London (UK) and focuses on music technology in embodied vocal practice and the vocalist-voice relationship. Her research, motivated by new materialism and feminist design theory, examines sociocultural and technoscientific entanglements and the (de)construction of data narratives in digital musical instrument design and broader HCI.

Mary Mainsbridge is a composer and performer with research interests in interactive environments and new musical instrument design. In recent years her performances have incorporated motion-based controllers with voice and piano. Her orchestral work, Concentric Motion: Concerto for Voice, Piano and Gestural Controller, was shortlisted in the innovative category of the International Space Time Concerto competition (2012). She has developed and presented audio-visual performance and installation works for the Electrofringe Festival, Sydney Fringe Festival, Underbelly Arts Festival and installations for interactive media events including the Vivid Festival, Beams Laneways Festival and the Art Bar at the Museum of Contemporary Art (MCA).

Kelsey Cotton [she/her] is a vocalist-artist-mover working with experimental music, Musical Artificial Intelligence, electronic textiles, soft-robotics, and Human-Computer Interaction. As a researcher, Kelsey is fascinated with pushing the limits of musical bodies, with her recent work delving deeper into designing artifacts that harness, augment, and fuse different physiologies. She is passionate about somatic interaction, the potential for inter-somatic experiences between fleshy and synthetic bodies, and first-person feminist perspectives of musical AI. Kelsey is currently undertaking PhD studies in Interactive Music and AI at Chalmers University of Technology in Gothenburg, Sweden.

Tove Grimstad Bang is a PhD candidate in Computer Science at Université Paris-Saclay, working with Human-Computer Interaction at the intersection of dance, music and technology. She holds a MSc in Engineering from KTH Royal Institute of Technology, Stockholm. Her research focuses on movement-based interaction, design and musical interaction and is grounded in a practice-based approach.

Lucia Montesinos Garcia is a PhD student at the IT University of Copenhagen, working within interaction design and music. Her current research focuses on musicking and embodiment, exploring how these concepts can inform and shape active music experiences specifically for non-musicians.

5 Technical and space requirements

The workshop materials for group activities will be provided by the workshop organizers. Due to the hybrid format of this workshop, we need a space with a stable internet connection, a projector, and a room with speakers, a digital audio interface, a mixer and microphones. Support for AV equipment configuration on site would be welcomed, but if not available organisers will be able to sort this out. We expect to host around 30 participants distributed in person and online. In terms of space capacity we will be need a room that can host at least 20 people.

6 Call for Participation

We invite artists, designers, researchers, musicians, and creative practitioners at NIME who are interested in soma design as well as other somatic and somaesthetic practices (including, but not exclusively, embodied, movement-based, gestural approaches) who may be wanting to learn more about these, or who are actively contributing to this space. The workshop will feature Kristina Höök and Lian Loke as keynote speakers, followed by a panel of expert practitioners, i.e., Mary Mainsbridge, Kelsey Cotton, Courtney Reed, and Tove Grimstad Bang. Prospective workshop attendees are encouraged to submit a position case in the form of an extended abstract, video abstract or demo to share their experiences working with soma-based methods. We will also engage in collective discussions on these practices, through a hands-on ideation canvas activity which will be facilitated for in-person and remote participants. We aim for this workshop to serve as a creative space at NIME to build, strengthen, and expand upon existing threads of work and collaboration in these areas.

7 Website

We will use a dedicated website[2] to advertise the workshop to a wide audience, to publish the workshop description, planned activities, and schedule. Our call for participation will point towards this website.

8 Ethical Standards

This workshop is part of a larger research project in collaboration between IT University of Copenhagen and the University of Nottingham. Ethical approvals and data management plans for this project, including in-person and remote workshops, were granted individually by the two institutions. The workshop will follow the standards set by NIME's ethics, environmental, and diversity committees.

Acknowledgments

This work was supported by the UK's Engineering and Physical Sciences Research Council (EPSRC) grant EP/Z534808/1 (Turing AI Fellowship: Somabotics - Creatively Embodying Artificial Intelligence); and was partially supported by the

[2]https://ccrma.stanford.edu/~cavdir/workshop/somainNIME.html

Wallenberg AI, Autonomous Systems and Software Program—Humanity and Society (WASP-HS), funded by the Marianne and Marcus Wallenberg Foundation and the Marcus and Amalia Wallenberg Foundation.

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