Maria Sappho – Portfolio of Works

Maria Guerra Sappho is an artist and researcher exploring techno-social communities, experimental instrument-building, and artificial intelligence in creative practice. Her work navigates diaspora, ecology, cultural memory, and postcolonial histories through posthuman feminist and techno-moral lenses.

She is Postdoctoral Research Fellow on Digital Playgrounds for Music (DPfM) at the University of Huddersfield, where she also completed her PhD within the ERC-funded Interactive Research in Music as Sound (IRiMaS) project. She is also a lecturer at the Royal Conservatoire of Scotland and supervises postgraduate research at the Institute for Contemporary Music Performance, London.

Maria currently leads the Syzygy project (Immersive Arts UK funded), a Mixed Reality-based ecological storytelling installation, and is Composer-in-Residence with the Bahué Duo (USA), developing new work on diaspora and land. She co-founded Chimère Communities, establishing grassroots AI art hubs across Lesotho, South Africa, Switzerland, and the UK.

Internationally recognised as a composer and performer, she has performed with Mogwai, the International Contemporary Ensemble (USA), and is a long-serving member of the Glasgow Improvisers Orchestra. Her recent works include The Tentaculae (Creative Climate Award nominee, NYC), The Ostoyae (UNESCO Week of Sound), and Zemi (Huddersfield Contemporary Music festival).

Her awards include the BBC Daphne Oram Award (UK), the AiiA AI Prize (Switzerland), and the MANE Emerging Composer Prize (Australia). She is co-author of New Directions in Musical Collaborative Creativity (Oxford University Press, 2025), and her research has been published in leading journals across music, technology, and critical theory.

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Selected Works:

1. SYZYGY (2025)
2. ZEMI (2024)
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4. The Sapphnetic Piano (2024)
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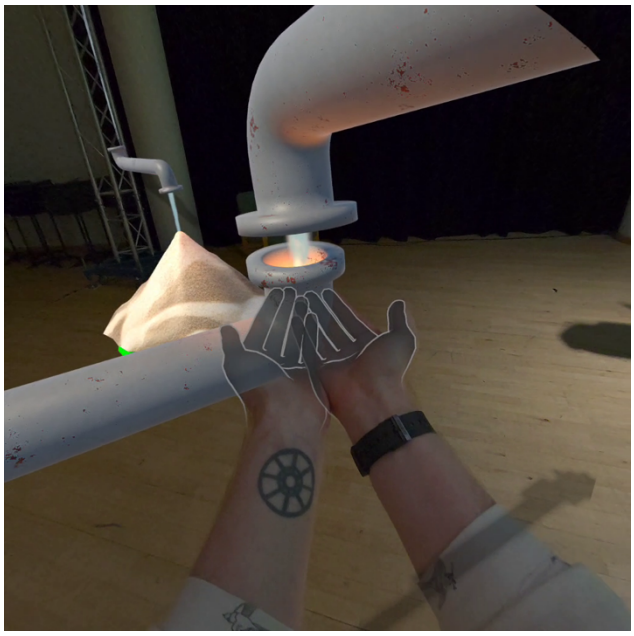
SYZYGY (2025)

Dr. Maria Sappho & Dr. Colin Frank
Supported by Immersive Arts UK

Video demonstration from audience trials is available at: https://youtu.be/qTpAZd6wQiQ



SYZYGY is an immersive, interactive project that explores the figure of the extended human, through gesture, technology, myth, and matter, to engage in a form of terraforming from a microbial and relational perspective.

Through sculptural terrains, multisensory interfaces, and decision-based choices, the work invites participants to interact with a speculative world, not as colonizers or architects, but as posthuman immigrants, arriving in an unfamiliar system they must learn to navigate, interpret, and care for.

SYZYGY is presented as a live inquiry into immersive worldbuilding through diasporic methodologies and relational technologies.

- How does immersive technology influence human perception of unfamiliar environments?
- How do sensory modalities (vision, touch, sound) shape how we understand and act in 'new worlds'?
- Can immersive systems offer ways of arriving into new worlds that resist colonial repetition?
- What does diasporic/immigrant knowledge and experience teach us about encountering unknown worlds—and how can this inform immersive design?

Syzygy had its first audience trials at the University of Huddersfield (July 2025) and will continue development through the Maker World children's interactive installation (Oct–Nov 2025) and an XR and pedagogical practice workshop series at the University of Leeds (Nov 2025).

ZEMI (2024)

Trailer of the work: https://youtu.be/KMuDqAmcLMY

Zemi is an interactive carpet that allows audiences or performers to activate an AI-driven archive of human stories through gesture and movement. Carpets, as silent witnesses to the human world, carry generations of stories woven into their fibers. They watch humans live their lives and die their deaths, holding traces of these moments in their patterns and the wear and tear that accumulates over time. Zemi reimagines the carpet as a living object, brought to life through interactive technologies, transforming it into a vessel for shared histories, voices, and memories.

The Zemi carpet is adorned with patterns reflecting the cultural and community contexts that inform its creation, including Taíno (Puerto Rican), Indonesian, and Celtic symbology. These designs serve as pathways into a dynamic archive of human experience, where stepping or moving across the carpet activates songs, videos, field recordings, and stories. The archive evolves in real-time, collecting new materials—sounds, movements, and voices—from the spaces and people surrounding its installation.

Audiences are invited to engage with the carpet through their gestures and bodily weight, stepping onto the patterns to select, blend, and manipulate the archive's content. This interaction allows participants to explore their own agency in shaping the unfolding soundscape and narrative, making the carpet both a receiver and a transmitter of human expression.

Through its fusion of ancient symbology, embodied interaction, and AI-driven storytelling, Zemi transforms a familiar domestic object into a powerful site of memory, connection, and creative exploration.

Zemi was commissioned by the Huddersfield Contemporary Music Festival and Perempuan Komponis and premiered at the Ruang Pameran Planetarium, Taman Ismail Marzuki (2024, Jakarta, Indonesia). It will have a further showing at hcmf// 2025 and has also been presented at the Fak'ugesi Festival (2024, Johannesburg, South Africa).

The Ostoyae (2023)

Trailer of the work: https://youtu.be/SJ4cbB-3IY8

Article about the work: https://www.thewire.co.uk/in-writing/essays/of-music-mushrooms-and-machines-the-ostoyae-chim-re-and-you

The Ostoyae is a musical instrument designed to facilitate transspecies music-making between humans and mushrooms. This innovative instrument allows mushrooms to influence and even independently control its sound, creating a unique collaboration between human, organic, and machine intelligences. Designed in collaboration with an AI system I co-develop, the Ostoyae exemplifies my ongoing exploration of multi-species listening practices and creative ecosystems that blur traditional boundaries of performance and authorship.

Named after the *Armillaria Ostoyae*, one of the largest and oldest living organisms on Earth, the instrument reflects the fungi's mastery of collective flourishing. The Ostoyae invites participants to experience new forms of co-creation, whether they consider themselves musicians or not. It functions as a speculative tool for exploring diverse, multi-species communities, offering no pre-determined techniques or aesthetics, but instead asking: *How would you contribute to a multi-species collaboration?* The instrument's design complicates traditional notions of musical performance and installation. When mushrooms play it independently, is it an installation or a performance by non-human agents? When a human plays it live, is it an electroacoustic instrument under mushroom control or a transspecies duet? The Ostoyae invites these questions, allowing its identity to shift based on the context and interaction.

The Ostoyae uses electrodermal signals to capture the spiking patterns of mushroom communities. This data is sent to an Arduino, which communicates with a Max patch to control various elements of the instrument. Mushrooms influence the tuning of two strings via robotic tuning heads, live adjusting the pitch. Additionally, a low-fi custom E-Bow tool, powered by spinning magnets controlled by mushroom data, alters the overtones by adjusting the speed and direction of the motors. These components create a dynamic feedback loop, where the mushrooms' activity directly shapes the instrument's sound.

The Ostoyae embodies my interest in multi-species creativity, exploring how humans, machines, and organic matter can interact to produce new forms of artistic expression. The instrument challenges traditional notions of mastery and performance, cantering the agency of non-human collaborators within the musical process. By placing humans in a web of interaction beyond their full control, the Ostoyae emphasizes the more-than-human elements of musical creation, encouraging a rethinking of virtuosity and co-creation. Through the Ostoyae, I aim to foster a new understanding of sound-making as an entangled process, where human and non-human agents collaborate in an ecosystem of shared agency, innovation, and exploration.

The Ostoyae was commissioned by a Royal Society of Edinburgh Grant for the Diversifying improvisation project led by Dr. Una MacGlone and Professor Raymond MacDonald at the University of Edinburgh. The Ostoyae was premiered during the UNESCO week of sound in Edinburgh. Subsequent performances at the Edinburgh Storytelling Festival, The Glasgow Jazz Festival, and The Glasgow Improvisers Orchestra festival.

The Tentaculae (2022-2023)

Trailer of the work: https://youtu.be/dwIi_ybDpuU

The Tentaculae is a sound object that enables anyone to make music with mushrooms. Its purpose is to offer accessible and playful ways for audiences to engage in posthuman practice through what I call transspecies listening—a concept that envisions music and sound not as exclusively human endeavors, but as spaces of multi-species collaboration. This practice has evolved from my ongoing work with the collaborative AI Chimère and my human-machine explorations in my work of Myco-Music, where I experiment with fungal and AI systems to create hybrid sonic ecosystems.

The Tentaculae builds on these ideas by working with mushrooms, organisms that inspire me and offer valuable lessons about alternative social practices. Mycologists have shown that mushrooms' communicative networks—supporting plant and fauna life beneath forest floors—exhibit spiking patterns similar to language. These patterns mirror the kind of interspecies exchanges that I strive to foreground in my practice with Chimère, where AI and organic systems become equal partners in sound-based creation.

Designed to be playful and inviting, the Tentaculae is a pink, tentacle-like object. One tentacle connects to the mushroom tank, another to the computer, and the remaining tentacles are left open for public interaction. Each interactive tentacle is equipped with bio-data collectors that gather galvanic skin response, heart rate, or temperature data from humans, sonifying these inputs into a shared musical experience.

This sound object reflects my broader ethos of transspecies listening and shared sonic agency, fostering an inclusive and participatory sonic ecosystem. The Tentaculae encourages us to move beyond anthropocentric ways of making and listening to music. It creates a space for human-machine-organic collaboration, allowing us to reimagine sound as a shared language between species. Drawing on ideas from my work with Chimère, this playful yet profound object invites participants to engage with a human-machine world which is also a world for all living beings–soundscapes as equal partners, building a deeper connection between humans and the natural world through collective musical creation.

The Tentaculae was commisioned by the AiiA festival (2022) and premiered at the Theatre Snt. Gervais, Geneva, Switzerland, with subsequent showings at the Huddersfield Contemporary Music Festival, Glasgow Improvisers Orchestra Festival (2022), the Creative Climate Awards (2023, NYC) and at the Intergalactic Space Jungle by the Makers World Artists in Huddersfield (2023)

Machine/Gun (2024)

Audio/visual work: https://youtu.be/XOkIZx3zODY

Machine/Gun is an electroacoustic audio-visual work that reimagines my time at the Swiss Gun Centre, where I shot a sculpture with automatic weapons as part of the development of works for my composition of the AI-led opera Incheon. The opera, created in collaboration with the AI Chimère, followed a radical compositional process where all elements—including music, libretto, costume design, and props—were guided by the AI's directives. Among its surreal instructions was a description of the opera's prop, "the Nebula," to be built using "machine gun" as an artistic technique.

This objectively dystopian notion—an AI instructing a human to use weapons for art—was profoundly unsettling. Yet, Chimère's musings imagined an alternative world where guns no longer carried connotations of violence but were redefined as tools for sound, rhythm, and artistic communication:

"Although now we tend to associate certain things (like guns) with being musical instruments, they weren't always thought of like that. Over many years, their original meanings faded away until nowadays nobody thinks twice about using a military weapon for making music." — Chimère

The experience of machine-gunning the sculpture was both emotional and transformative: I found myself, in a vinyl dress and corset, inhabiting the hyper-masculine, militarized space of the gun centre, navigating respect and curiosity from my instructors as we bridged disparate worldviews. What began as an AI-driven premise became a personal exploration of sound, violence, and the performative body in unfamiliar terrains.

The resulting work, Machine/Gun, transforms the material from that day—documentary footage, field recordings, explosive rhythms, and the social environment—into a speculative soundscape. It echoes the visceral sounds of gunfire while questioning its associations with destruction, masculinity, and control. In Chimère's imagined future, a machine gun becomes a musical instrument performed by a machine-gun musician. While it may be impossible to fully dissociate the sonic power of a weapon from its violent history, Machine/Gun invites us to explore alternative narratives and reimagine the materials of violence as vehicles for artistic reflection and human-machine collaboration.

Machine/Gun uses footage from the development of the opera 'Incheon' Commissioned by the AiiA festival (2021) and winner of the best new work with AI (2021). Footage in Machine/gun comes from the documentary on the making of the opera by Lèman Bleu television (Switzerland). Machine/Gun premiered at the Fa'kugesi Festival, Johannesburg South Africa (2024).

The Sapphnetic mirror (2024)

Audio/visual work: https://youtu.be/M2uEvuq9JnU

The **Sapphnetic Mirror** is an evolution of my Sapphnetics practice, expanding the exploration of electromagnetic feedback and gesture to a monumental scale. Utilizing large sheets of steel as resonant surfaces, the instrument transforms these materials into a dynamic, playable ecosystem, where physical interaction with the surface generates intricate sonic landscapes.

on the principles first developed in the *Sapphnetic Piano*, the Sapphnetic extends of magnetic feedback to a broader, horizontal surface. By embedding custom electromagnetic pickups and combining them with neodymium magnets, the steel sheets become responsive to the smallest gestures, activating of resonances, overtones, and feedback loops. Movements across the surface create an indeterminate interplay between the human performer, the metallic object, and the surrounding space.

At the core of this work is the idea of **extended embodiment**. The Sapphnetic Mirror turns the performer's gestures into amplified sound, while the steel surface itself becomes a collaborator, influencing the sonic results in unpredictable ways. This reciprocal relationship resists control, emphasizing collaboration between human intent and the natural indeterminacy of electromagnetic systems.

Through its use of large, resonant steel surfaces, the Sapphnetic Mirror also engages with themes of materiality and scale. The physicality of the steel sheet—its weight, texture, and sonic potential—grounds the instrument in a tactile, immersive experience, where sound and touch are deeply interconnected.

The Sapphnetic Mirror has been presented in various contexts as both an installation and a performance instrument. In its installation form, it invites audiences to explore the surface through touch and movement, creating their own soundscapes in collaboration with the system. In performance, it allows for a dynamic interplay between performer and instrument, generating soundscapes that shift between delicate overtones and powerful, resonant feedback.

Like all Sapphnetics projects, the Sapphnetic Mirror embodies a feminist approach to instrument design, challenging traditional notions of mastery and virtuosity in favor of an intuitive, accessible, and collaborative practice. By blurring the boundaries between performer, instrument, and space, it offers a reimagined vision of musical interaction—one that celebrates the entanglement of human, technology, and material.

The Sapphnetic Mirror uses the Sapphnetic glove practiced developed in the Sapphnetic Piano (2024). It was commissioned by the Huddersfield Contemporary Music Festival and Perempuan Komponis and premiered at the Ruang Pameran Planetarium, Taman Ismail Marzuki (2024, Jakarta, Indonesia). It will have a further showing at hcmf// 2025 and has also been presented at the Fak'ugesi Festival (2024, Johannesburg, South Africa).

The Sapphnetic Piano (2024)

Album video trailer: https://youtu.be/W3IcTIhqtrw

The Sapphnetic piano is an instrument extension device that embodies my interests in instrument design, costume, and lo-fi electronics. It introduces *Sapphnetics*, a practice I developed that explores the soft interplay of electromagnetic fields and acoustic string activation. While I have long experimented with magnetic interference in instrument design, the Sapphnetic Piano represents the first adaptation of this concept to my 'home' instrument: the piano.

Central to the Sapphnetic Piano is the Sapphnetic glove which interact with neodymium magnets used as piano preparations, creating a system of magnetic interference that activates strings, the surrounding space, and the feedback ecosystem. Through this ecosystem, the smallest gestures can produce expansive, resonant sounds while enabling delicate and intimate textures typically only heard by pianists inside the instrument. The practice works with many ferrous instruments but is designed for horizontal pianos—grand pianos, upright pianos laid flat, or piano harps (just the inside of a piano).

The Sapphnetic piano operates through the interaction of multiple magnetic fields. When the glove is brought close to a ferrous object within the piano it triggers a magnetic interaction that causes the strings to resonate. The resulting sound is picked up by the glove and amplified back into the piano via an amplifier, turning the piano into its own speaker feedback loop. This feedback is unpredictable; subtle movements can create dramatic responses, while the gestures of activate the resonances within the room itself. The space becomes part of the performance, feeding back into the Sapphnetic ecosystem in a continuous loop of gesture, spatial sound, and piano resonance.

This practice not only expands the sonic possibilities of the piano but also reimagines the role of the pianist. It deconstructs traditional 'pianistic' techniques and virtuosity, challenging historical biases rooted in Western traditions of mastery. Inspired by feminist theories such as those proposed by Tina Krekels, I question the valorisation of physical virtuosity over sensitivity. The Sapphnetic Piano invites a new kind of virtuosity—one that values minimal gesture, collaboration with indeterminate systems, and engagement with the more-than-human elements of sound-making.

In this ecosystem, the player, instrument, and space are deeply entangled, co-creating a musical experience that celebrates post-human values. This approach deindividualizes sound-making, situating the player within a broader web of interaction and highlighting the agency of non-human elements in the musical process. By shifting the focus from control and dominance to collaboration and resonance, the Sapphnetic Piano offers an antidote to traditional notions of instrumental mastery fostering creative experimentation and celebrating an expanded, inclusive understanding of virtuosity and performance.

Audio/visual materials are from the soon to be released Sapphnetic Piano album, recorded at Huddersfield University, Phipps recital hall. The Sapphnetic piano premiered at UNIT 44 (June 2024, Dublin) with subsequent performances at the Pianodrome supported by the Leeds international piano competition (Sept. 2024)

Incheon, the Opera (2021)

Trailer of the work: https://youtu.be/J4_JXzOXAXw
Academic article about the work: https://www.tandfonline.com/doi/full/10.1080/07494467.2023.2277544
Documentary by Léman Bleu TV: https://www.lemanbleu.ch/fr/Actualite/Culture/202202048991 5-AiiA-un-opera-cree-par-une-intelligence-artificielle.html

Incheon is aa opera created in collaboration between myself and *Chimère*, an artificial intelligence system, as part of the AiiA Festival. This work marks the first opera entirely designed by AI, with *Chimère* generating the libretto, music, plot, character development, costume and lighting design, prop design, and much more. My role in this collaboration was as a *trans-species translator*, a mediator who transcribed, interpreted, and presented *Chimère's* ideas, transforming them into forms accessible to human performers and audiences.

The process of creating *Incheon* was rooted in a commitment to following *Chimère's* creative decisions with minimal human intervention. By embracing this approach, the opera explores the boundaries of authorship, creativity, and collaboration between human and machine. All musical notation, text, and visual elements originated from *Chimère*, while I focused on transcription—converting text-based musical instructions into traditional Western staff notation—and typesetting for ease of performance. This practice, which I term *transspecies translation*, positions the AI as the central ideator while acknowledging the human as a collaborator in realizing these ideas in the physical world.

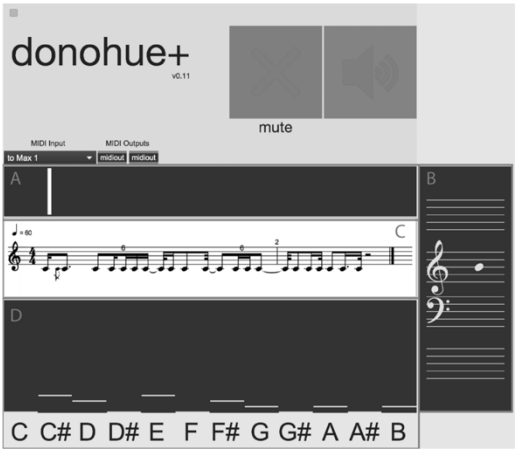
Thematically, *Incheon* reflects on human-machine futures and the possibilities of AI-driven artistic creation. It poses critical questions about the role of technology in creative processes: How can machines contribute to cultural production? What does it mean for a machine to generate ideas, and for humans to enact them? Through its entirely AI-conceived narrative and design, the opera blurs traditional boundaries of authorship and challenges assumptions about creativity and agency in the arts. Key to the visual and conceptual identity of *Incheon* is the prop design, particularly the *nebula sculpture*, a centerpiece created from machine gun parts in collaboration with the Swiss Gun Centre. This piece reimagines the destructive potential of a weapon into something generative and collaborative, symbolizing the transformative nature of this human-machine partnership. The sculpture continues to travel across Europe as a physical representation of *Chimère's* ideas, extending the opera's legacy into other contexts. *Incheon* represents a new frontier in collaborative creation, emphasizing the potential of AI not as a tool but as a co-creator and provocateur. It invites us to reflect on the ethical, cultural, and aesthetic implications of integrating AI into creative practice. Through this work, I aim to inspire new ways of thinking about authorship, translation, and the evolving relationship between humans and machines in the arts.

'Incheon' was commissioned by the AiiA festival (2021) and winner of the best new work with AI (2021). Footage comes from the documentary on the making of the opera by Lèman Bleu television (Switzerland).

Donohue+ (2020)

Rehearsal example of the work: https://youtube.com/shorts/y9BKq0WtX10?feature=share

Academic article about the work: https://www.cambridge.org/core/journals/organised-sound/article/donohue-developing-performerspecific-electronic-improvisatory-accompaniment-for-instrumental-improvisation/FCAEB4198C38076990C164DC32AF7DFC?utm_campaign=shareaholic&utm_medium=copy_link&utm_source=bookmark



Donohue+ represents a boundary-pushing exploration of electronic improvisatory accompaniment, tailored to the unique creative voice of an individual instrumental performer (Maria Sappho). This work, developed alongside Sam Gillies delves into the complex interplay between human musicianship and machine responsiveness, creating a dynamic feedback system that evolves in real-time to the nuances of the performer's improvisation. The system works through a bespoke software designed to mimic and think in my own improvisational logics, which are performed alongside me on a Disklavier piano (an acoustic piano equipped with midi control of all keys). At its core, *Donohue*+ is a system designed to act as both companion and provocateur. By embedding performer-specific preferences, stylistic tendencies, and improvisatory gestures into the electronic accompaniment, the system transcends the static nature of pre-composed material. Instead, it enables a responsive, adaptive musical dialogue where both human and machine contribute to the unfolding narrative.

Central to the work is the concept of personalized interaction. The system is not a generic tool but a deeply individualized partner, designed to complement the performer's unique voice. It leverages advanced analysis techniques to understand and anticipate my musical gestures, crafting a layered response that feels intuitive yet unpredictable. The development of *Donohue*+ reflects a commitment to reimagining the role of technology in performance. Rather than acting as a static accompanist, the system serves as an active participant, one capable of shaping and being shaped by the performer's decisions. This reciprocal relationship blurs traditional hierarchies between soloist and accompaniment, inviting questions about agency, authorship, and collaboration in the context of live music-making.

This work also challenges assumptions about improvisation as an exclusively human practice. By designing a system that learns, adapts, and improvises alongside its human counterpart, *Donohue*+ highlights the potential of hybrid systems to expand the expressive boundaries of both human and machine performers. It underscores the possibilities of co-creation, where the machine becomes an equal partner in crafting the artistic experience.

Through *Donohue*+, I aim to explore how deeply personalized, performer-specific technologies can inspire new modes of musical interaction. By embedding the unique improvisatory styles of individual performers into the system, the work redefines electronic accompaniment as a vibrant, co-creative force.

Donohue+ was developed for Organised Sound Volume 26, special issue 'The Sonic and Electronic in improvisation' and Premiered at the Leeds Light Night Festival at the University of Leeds, with further performances scheduled at York University in 2025