

# SAM BILBOW, PH.D., AFHEA

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## ABOUT

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27 year old creative programmer, researcher, and open-source software enthusiast with 5 years of experience in interactive music systems and augmented reality, seeking full-time software developer roles.

## EDUCATION

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**Ph.D.:** Music Technologies with a focus on AR Experiences *University of Sussex* Pass 2019 - 2023  
**MA:** Music and Sonic Media, *University of Sussex* Distinction 2018 - 2019  
**BA:** Music Technology, *University of Sussex* 1st Class 2015 - 2018

**IB:** Physics, Economics, Music, Maths, English, Japanese, *Sha Tin College, Hong Kong* 34 pts 2013 - 2015  
**GCSE:** English, Maths, Physics, Chemistry, Biology, History, Geography, Music, French, Mandarin. *Archbishop Holgates, York* 1A\* 7A 3B 2011 - 2013

## EXPERIENCE

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**Leverhulme Postdoctoral Research Fellow** 2023 - 2024  
*University of Sussex Brighton, UK*  
One year funded position developing my PhD research into FOSS multi-performer experiences.

**Doctoral Tutor for Interactive Music Systems** 2022 - 2023  
*University of Sussex Brighton, UK*  
Four month 2nd year UG module, teaching and assessing C++ (Arduino), circuitry, and DSP (Max MSP) concepts.

**Interaction Design and Hardware Development on The Sentinel Self** 2022  
*Studio Sissel Marie Tonn Hybrid*  
Six month collaboration designing heart rate sensor interactions for a funded art installation.

**Junior Research Associate** 2017  
*University of Sussex Brighton, UK*  
Two month funded position carrying out independent research on the Syncephonia project.

## SKILLS

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**Languages** C#, C++, Python  
**Systems** Unix Shell, Git, Docker, Arduino, Raspberry Pi  
**Audio & Engines** Unity, Godot, Pure Data, Max MSP, Supercollider  
**Personal** Project time management, individual & team-based research interdisciplinary collaboration, creative problem solving

## PROJECTS

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<b>coMuse</b>	FOSS Multiplayer Audiovisual AR Experiences	C++, Godot, PureData	<a href="#">2023</a>
<b>The Sentinel Self</b>	Interaction Design for Immunology Art Installation	C++ (Arduino), C# (Unity)	<a href="#">2022</a>
<b>polygons~</b>	Performing Audiovisual AR Instruments	C# (Unity), PureData	<a href="#">2022</a>
<b>polaris~</b>	Creating Audiovisual AR Instruments	C# (Unity), PureData	<a href="#">2021</a>
<b>area~</b>	Wireless Wearable Audio AR Instrument	Max MSP, C++ (Arduino)	<a href="#">2020</a>
<b>nodenecklace</b>	Octophonic Interactive Sound Installation	Max MSP, C++ (Arduino)	<a href="#">2019</a>
<b>gestur.a</b>	Prototype Gestural Synthesiser App	Swift, PureData	<a href="#">2019</a>
<b>Solar</b>	Spatial Audio Solar System Sonification App	C# (Unity)	<a href="#">2019</a>
<b>BandAR</b>	QR-based AR Audio Mixing App	C# (Unity)	<a href="#">2018</a>

## COMMUNITY

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### Peer Reviewing

Artificial Intelligence and Musical Creativity	Conference	2023
Leonardo	MIT Journal	2023
Tangible, Embedded, and Embodied Interaction	ACM Conference	2022

### Events

Workshop and Installation Co-Chair for Artificial Intelligence and Musical Creativity Conference	2023
Conference Organiser for Sensation Sussex	2021
Seminar Series Organiser for Sensation Sussex	2020

### Initiatives

Development Blogs	Personal Website
Contributor, Documentation, Moderator	Project Northstar (Ultraleap)
Founder, Moderator	The XRt Space

## PUBLICATIONS

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### Material, Embodied, and Spatial Relations in Augmented Reality 2024

*Sam Bilbow*

- Doctoral Thesis
- University of Sussex

### Mixed Realities as New Interfaces for Musical Expression 2023

*Sam Bilbow, Yichen Wang*

- Workshop Proposal, Hybrid Workshop
- New Interfaces for Musical Expression Conference 2023, Mexico City, Mexico

### Evaluating polaris~ 2022

An Audiovisual Augmented Reality Experience Built on Open-Source Hardware and Software

*Sam Bilbow*

- Double Blind Peer Reviewed Conference Paper, Online Presentation
- Proceedings of New Interfaces for Musical Expression Conference 2022, Auckland, New Zealand

### The Value of Sound within a Multisensory Approach to AR in the Arts 2021

*Sam Bilbow, Chris Kiefer, and Cécile Chevalier*

- Workshop Paper, Online Presentation
- Proceedings of the Multisensory Augmented Reality Workshop at INTERACT 2021, Bari, Italy

### Developing Multisensory Augmented Reality as a Medium for Computational Artists 2021

*Sam Bilbow*

- Peer Reviewed Doctoral Consortium Paper, Online Presentation
- Proceedings of Tangible, Embedded, and Embodied Interaction Conference, Salzburg, Austria

### The area~ System 2021

Exploring Real and Virtual Environments through Gestural Ambisonics and Audio Augmented Reality

*Sam Bilbow*

- Peer Reviewed Journal Article
- Sonic Scope: New Approaches to Audiovisual Culture, Goldsmith Press