Primary

1. Chakraborty, S., Dutta, S., & Timoney, J. (2021). The Cyborg Philharmonic: Synchronizing interactive musical performances between humans and machines. Humanities and Social Sciences Communications, 8(1), 1–9. https://doi.org/10.1057/s41599-021-00751-8
    1. It is here that we seek to investigate how real-time cooperation between machines and humans could be achieved through technologies and models from synchronization and learning, with their exact configuration for the generation of melody alongside each other, to achieve the vision of human–robot symphonic orchestra. (p. 2)
    2. "Robotic Musicianship" has always been a challenging domain and has garnered significant interest among researchers over recent years for the generation of musical pieces. Along with sonic features like beats and chords, time plays a crucial role in terms of the rhythmic aspect of musical performance. (p. 3)

2. Kaipainen, M., Ravaja, N., Tikka, P., Vuori, R., Pugliese, R., Rapino, M., & Takala, T. (2011). Enactive Systems and Enactive Media: Embodied Human-Machine Coupling beyond Interfaces. *Leonardo (Oxford)*, *44*(5), 433–438. https://doi.org/10.1162/LEON_a_00244
    1. The core concept, an enactive system, is constituted by dynamically coupled human and technological processes, that is, a dynamic mind-technology embodiment. An enactive system does not assume a standard interface with goal-targeted conscious interaction; rather the function of interfacing is driven by bodily involvement and spatial presence of the human agent without the assumption of conscious control of the system (p. 433)
    2. As a contrast to the standard conceptualization of human computer interaction, the enactive relationship conceives the underlying technology as continuous, ubiquitous and "intelligent" accompaniment to the human actor, or a direct extension of the user's perceptual and cognitive apparatus involved in participation in the system—living and acting with the system instead of just using it. (p. 433)

3. Zioga, P., Pollick, F., Ma, M., Chapman, P., & Stefanov, K. (2018). "Enheduanna—A Manifesto of Falling" Live Brain-Computer Cinema Performance: Performer and Audience Participation, Cognition and Emotional Engagement Using Multi-Brain BCI Interaction. *Frontiers in Neuroscience*, *12*, 191–191. https://doi.org/10.3389/fnins.2018.00191
    1. It enables for the first time the simultaneous real-time multi-brain interaction of more than two participants, including a performer and members of the audience,

using a passive EEG-based BCI system in the context of a mixed-media performance. (s. intro)

   b. The methodology focuses on the oscillatory processes of the brain activity, which occur when large neural populations are not engaged with a specific task and synchronise following an oscillatory pattern. While, with the use of temporal band-pass filters, the 4–40 Hz frequencies are processed and sent to the MAX MSP Jitter software. (s. EEG Data Acquisition)

4. Cook, P. R. (1999). *Music, cognition, and computerized sound : an introduction to psychoacoustics* . MIT Press. https://mitpress.mit.edu/books/music-cognition-and-computerized-sound
   a. Sound moves through the air as a travelling wave with a velocity of 1128 feet (344 meters) per second. The wavelengths of sinusoidal sound waves of various frequencies and musical notes are shown in table 1.1. Middle C on the piano keyboard (traditionally located closest to the first letter of the brand name above the keyboard) is C4 and has a frequency of 261.6 hertz (Hz; cycles per second). Each doubling or halving of frequency is called an "octave," and causes the index number to go up or down by 1. Thus the C above middle C is C5, and has a frequency of 523.2 Hz. (p. 2)
   b. What happens when a sound consists of two frequencies that aren't widely separated, so that some hair cells are excited by both sinusoids? We hear beats. If the two frequencies are a few cycles apart, what we hear is like a single sine wave of rising and falling intensity. As we increase the frequency difference, we hear a vibrating, somewhat harsh sound. If we make the frequency difference large enough, we hear the two sinusoidal sounds clearly and separately. (p. 8)

5. Ehrlich, S. K., Agres, K. R., Guan, C., & Cheng, G. (2019). A closed-loop, music-based brain-computer interface for emotion mediation. *PloS One*, *14*(3), e0213516–e0213516. https://doi.org/10.1371/journal.pone.0213516
   a. In addition, the majority of neuroscientific research on affective responses has investigated brain processes involved in mere recognition of emotional content, while the brain processes involved in the induction and mediation of affective states by emotionally-evocative stimuli are not yet well understood, due in part to the difficulty of carefully controlling these types of studies. (s. intro)
   b. Any desired 'trajectory' through the valence-arousal-space is therefore possible, e.g. going continuously from happy over sad towards angry musical expressiveness (see exemplary trajectory in Fig 2B). This principle allows the integration of the algorithm into an online BCI architecture according to our initially proposed concept (Fig 1). (s. Materials and methods)

6. Holland, S. (2013). *Music and human-computer interaction* . Springer. https://www.springer.com/gp/book/9781447129899

7. Lefford, M. N., & Thompson, P. (2018). Naturalistic artistic decision-making and metacognition in the music studio. *Cognition, Technology & Work*, *20*(4), 543–554. https://doi.org/10.1007/s10111-018-0497-8
    a. As a result, participants can often feel that their unique talents and thus reputations (and thus careers) are determined by the amount of agency they have within the process and by the decisions that are taken during a production. All of these factors contribute to the intense working environment of the recording studio. (s. intro)
    b. The numerous and varying demands of this macrocognitive setting require contributors inside the recording studio to regulate their thinking using metacognitive skills. Metacognition involves evaluating one's own cognition (Flavell 1987) or thinking processes. During a studio production, individuals can use metacognition as a way of managing the multiple cognitive demands placed upon them during collaboration and the multiple forms of information available for decision-making. (s. Macrocognitive work and metacognition)

8. Johnson, D., Damian, D., & Tzanetakis, G. (2020). Evaluating the effectiveness of mixed reality music instrument learning with the theremin. *Virtual Reality : the Journal of the Virtual Reality Society*, *24*(2), 303–317. https://doi.org/10.1007/s10055-019-00388-8
    a. Current systems, however, typically display real-time visual cues and feedback on standard computer displays. This requires that a student transfer their focus from the music instrument to the computer display to view the information. Furthermore, there is an inherent transfer function that a student must perform to map the visual cues overlaying a graphical representation of the instrument to the physical instrument they are interacting with. These challenges increase demand on the student's cognitive processing abilities. (p. 304)
    b. Furthermore, some instruments that lack signifers of discrete notes, like the violin, require precise ear training for assessment of sound quality. Adding a visual layer to the music learning process makes this already difficult task more complex as students must process multimodal visual and auditory feedback simultaneously (p. 304)

Secondary

1. Brown, Oliver. (2021). *Beyond the Creative Species: Making Machines That Make Art and Music* . MIT Media Press, https://mitpress.mit.edu/books/beyond-creative-species.

2. Luca, M., & Bazerman, M. H. (2020). *The power of experiments : decision making in a data-driven world* . The MIT Press. https://mitpress.mit.edu/books/power-experiments

3. Kao, J. (2021). Another Perspective: Music Education in the Age of Innovation. *Music Educators Journal*, *107*(3), 63–69. https://doi.org/10.1177/0027432121994079
    1. We live in an era of digital music streaming, online experiences, and intelligent instruments that also shape new patterns of music creation and consumption. And the pandemic of 2020–2021, despite all its challenges, has been a powerful spur to innovation. Virtual performance, new collaborative technologies such as JackTrip,2 online music instruction, new kinds of software, and novel business models have all made their appearance during this period. In short, we live in a time in which the urgent need and the opportunity to innovate music teaching and to support young musicians have never been greater. (s. Age of innovation)
    2. This is an era in which to be employable means to have the improvisational ability to quickly learn new skills—or, better yet, have the skills to create your own job. It is an era that favors the innovator and the entrepreneur. Individuals are empowered as never before with new technology-based capabilities to learn, collaborate, publish, and influence. The implications for careers in music are clear. (s. Age of innovation)

4. Glinsky, A. (2000). *Theremin: Ether music and espionage*. Urbana: University of Illinois Press. https://www.press.uillinois.edu/books/catalog/98mgt7tm9780252072758.html