Abstract

Timbre-Led- Rhythms: Towards Adaptive Musical Experiences in Internet of Musical Things (IoMusTs)

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The era of ubiquitous technology has significantly transformed access to amateur music performance through computing-led solutions. This transformation can be further expanded to include networked activities through the growing field of the Internet of Musical Things (IoMusT) and its ecosystem. IoMusT is a framework for connecting various musical elements within interactive networks. This expanded domain calls for a broader perspective in musical interface design, extending beyond traditional thinking and mainstream approaches to take full advantage of the network. Interfaces, as IoMusT's crucial components, should stratify the wider user base, enabling diverse interaction styles and manipulation methods to facilitate seamless engagement with musical content by everyone. As part of Ubiquitous Computing and Music Technologies (UbiMus), IoMusT envisions these interfaces as pervasive elements within the musical experience. This research leverages interfaces as dynamic components within IoMusT to design ubiquitous and expressive musical interactions for non-musicians, particularly targeting amateurs and beginners.

Based on new insights from research into timbre's impact on musical interaction for non-musicians, this work explores timbre-led rhythms through gestural modalities. Focusing on concepts, frameworks, and interactions for creativity support, the talk emphasizes the need for real-time timbre classification for gesture-timbre mapping to achieve enhanced expressivity and intuitiveness. While a linear mapping approach can provide simple, beginner-friendly interactions, it lacks the freedom to naturally manipulate timbre, making the interaction less engaging. To address this, classifying timbral qualities and gestures, driven by non-linear dynamic interactions and non-location-based mappings, would facilitate the embodied dimension of musical interaction. Thus, by integrating timbral feedback and real-time timbre classification within the IoMusT field, this research should widen the boundaries of musical expression and interaction.