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AN ABSTRACT OF

AN EXPLORATION OF DEEP LEARNING IN CONTENT-BASED MUSIC INFORMATICS

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Given the unchecked growth of digital information and the difficulty faced in attempting to accurately characterize it in the realm of music, this study explores deep learning as a general approach to the design of computer audition systems for music description applications. First, methods and trends in content-based music informatics are reviewed in an effort to understand why progress in this domain may be decelerating, and, in doing so, identify possible deficiencies in this methodology. Standard approaches to music signal processing are then reformulated in the language and concepts of deep learning, leading to a comprehensive review of the state of the art. These methods are then applied to two classic music informatics challenges: timbre similarity and automatic chord estimation. Encouraging performance is obtained in both areas, advancing the state of art in the latter, while providing deeper insight to the tasks at hand. Based on these findings, this work concludes with perspectives for the future, including an assessment of outstanding challenges and the potential impact of continued research in this domain.

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