Analysis of The Art of Fugue: capturing Bach's style with mathematical patterns and transformations

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Talk Abstract

The Art of Fugue is a collection of 20 fugues and cannons written by Johann Sebastian Bach in the 1700s. Each piece starts with a single theme which is transformed, developed and mixed in fascinating mathematical combinations resulting in a distinctive musical style. In this talk, we use the method introduced in [1] to analyze 20 pieces from the Art of the Fugue. We focus on the variation of motifs from one piece to another as well as the complexities of mathematical transformations present throughout the entire collection. We also demonstrate how using maps of transformations could guide nonmusicians to compose original pieces in the style of Bach's fugues.

Keywords: Bach, fugue, motif, geometrical transformations, math and music.

References

 Nita B.G., Nita S.O., Robila V. and Cho J.: Composing in Bach's Style Using Mathematical Transformations. The UMAP Journal 45(1), (2024) 41–56.