

*Digital Music Composition**Background*

Music composition, depending on the stylistic choices and goals of the composer, often follows rule-based schema. Decisions such as note selections and rhythms are extremely context-dependent, where such choices are made depending on the chord structure/underlying harmony of the song, dynamics, role of an instrument, and countless other parameters. Furthermore, individual artists often utilize custom “rules” (consciously or otherwise) that define that artist’s style. As a result, rule-based systems, such as neural network/fuzzy hybrid systems, offer a natural approach to computer-generated songwriting.

Proposal

Our proposal is to generate a piece of jazz music in the “style” of a prominent musician, such as John Coltrane or Miles Davis, using a neural network/fuzzy hybrid system.

Research Methodology

USC’s music school offers the perfect amalgamation of music experts to develop a set of “if-then” rules to guide music composition. Additionally, Taylor has several music expert contacts outside of USC capable of providing useful input on rule content. We plan to contact and interview a small subset of these experts to generate a knowledge pool and corresponding rule set. Initial research will be conducted prior to expert interviews to develop pointed questions and determine the structure of potential rules. Furthermore, we will review the current research in music composition via neural networks to guide our design choices and learn about current methods relevant to our project.