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**Hyperscore: A New Approach to Interactive Computer-Generated Music** by Mary Farbood

Hyperscore is an interactive computer-assisted composition software, targeting at various people with different levels of music training, from novices to composers. It lets people generate a piece of music through a drawing interface, mapping the shape of curves into various musical elements. It is interesting to know that Hyperscore was initially conceived as a software component of the “Big Thing”, a construction kit for children to compose in Tod Machover’s Toy Symphony project.

In the chapter four of Farbood’s master thesis, she described the evolution of Hyperscore. In version one, all motives were pre-defined and the selections of motive, counter-motive, and rests were chosen randomly by the program. Users only had the control of assigning the rests by the texture of the curves. There were no concerns of phrasing or harmonic movement in this version. In version two, Farbood did two major improvements including the creation of “pens” and the harmony generator. She designed several pens with different colors, and each color was mapped to a unique motive. Harmonic functions, such as tonic, dominant, and subdominant, were considered and applied using hierarchical Markov chains. However, she received several responds in the user-testing that people were often confused by the reactions of computer about the drawing.

Version three was approached completely differently from the previous two versions. More human decision making were involved in this version. For example, users can depict the starting and ending time of each motive, assign pitch registers, adding harmonic accents by drawing vertical spikes, controlling timbre through the curve texture, tuning the speed of the tempo, and choosing new harmony types, such as atonal, pentatonic, and no harmony. Despites of all these added functions, the global sense of tension was still missing.

In version four, the version still in progress when the thesis was written, there were four major improvements mentioned. The motives were editable and the drawing interface simulated physical drawings by providing the grab and pull functions. The harmonic progression generator was improved based on David Cope’s SPEAC system. The shape of the annotations was intended for controlling the motive transformations such as augmentation, diminution, retrograde, and inversion.

Hyperscore is a very smart composition software. The composition task has been well thought and organized into several easily accessible control interfaces. It relieves users from many tedious works but allows high level control of the piece at the same time. Editing each motive in a small scale first and then laying them out in a global scale is very intuitive for music composition. But just as Farbood mentioned in the thesis, the most difficult part is to decide how much should be done automatically and how much should be left for users. Novices can get fast rewarding composition experiences from Hyperscore, but composers may get frustrated of the amount of time they need to spend before they can create the exact piece with the software.