Creating a Computer-Assistant for Performance

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Abstract

Centuries of experience with acoustic instruments means there is a body of knowledge about and understanding of what can be done with a physical instrument, and this knowledge is refined and propagated through the interactions of teachers and pupils. That experience has nothing to tell us about synthetic instruments and the one-off sounds for which such instruments are often cre   e do not know anyth of the caveman's music, but it is clear that in many cultures the professional n for thousands of years. One feature that this engenders is the emergence of vi range of instruments, where skills are passed from teacher to pupil, and are gradu to meet changing circumstances, such as instrument variation and mechanical character of the instrument.

From the standpoint of a composer within the Western art tradition this n

But even so the time scale is insignificant compared with the years of experience of the main classical instruments, or even the more modern additions to the orchestra. In practice it is not possible for a professional composer to discover much about his created instrument in the time available.

Often the result is imaginative music played by what might be conceived as an amateur or student band.

As a particular example of how hard this process can be be refer to the Chaotic Oscillator(Dobson and Fitch, 1995). The authors invented a particular non-linear process which they showed was capable

6 The ¯ision

The process we have described so far has been aimed at the composer, a person for whom we have a special respect. But the underlying agent technology and the autonomous agen

John ffitch. *The Csound Book: Tutorials in Software Synthesis and Sound Design*, chapter 16: A Look at Random Numbers, Noise and Chaos with Csound. (ed. Boulanger) MIT Press, February 2000.

John ffitch and Julian Padget. Towards computer-assistant performance in electro-acoustic music. In *ICMC2001*. ICMC, 2001. Submitted.

A. Friberg and J. Sundberg. *Grammars for Music Performance*. KTH, 1995.

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