

The Geek-Tones™:

An Experiment in Distributed, Real-time Musical Integration

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Extended Abstract

In our previous work, which we presented in the form of an impromptu uninvited evening session at the first CIDR conference, we demonstrated that gifted artists like us :-) can successfully masquerade as computer scientists and even occasionally publish in respectable conferences and journals. We are not proud of this. However, this has enabled us to more or less support our families without having to play Neil Diamond songs at the Airport Hilton lounge. It also seems to have resulted in an actual invitation to present our “follow-on work” at this year’s CIDR conference.

In any scholarly pursuit, one must of course address the question of how one’s work relates to the body of work done previously by others. One thrust of prior research on musical integration has focused on issues related to infrastructure heterogeneity, such as reconciling different types of cables (e.g., 1/4” vs. XLR jacks) or the use of both solid-state and tube amplifiers. Another thrust has explored heterogeneity at the instrumentation level, demonstrating that the simultaneous use of both Fender and Gibson guitars can generate highly desirable musical results.

In contrast to these prior works, the focus of our work and this year’s invited presentation is on semantic musical heterogeneity. This includes novel techniques for (1) exploiting temporal constraints to facilitate playing the same song at the same time and (2) doing so in the same key and hopefully even the same time signature. To our knowledge, we are the first middleware and/or database system researchers and developers to attempt this at a major database conference (particularly without a safety net). In addition, our work on musical integration will be

accomplished in real-time, and without precompilation (i.e., without the benefit of rehearsals).

The plan for the presentation is for the three co-authors of this abstract to simultaneously present their individual results. Len Seligman will present algorithmic results related to parallel operations on strings; he will demonstrate techniques for handling up to six strings in parallel. Dean Jacobs will present new results on primary keys, also involving parallelism; he will show that his results generalize easily to composite keys. Michael Carey will present results in the area of data-bass management, again focusing on string data; his string techniques will be serial rather than parallel in nature, in contrast to the other techniques being presented, and are most appropriate when applied to large strings.

All conference attendees are invited!

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Proceedings of the 2005 CIDR Conference