

Term Rewriting Extension for the Faust Programming Language

- *Albert Gräf*

This paper discusses a term rewriting extension for the functional signal processing language Faust. The extension equips Faust with a hygienic macro processing facility. Faust macros can be used to define complicated, parameterized block diagrams, and perform arbitrary symbolic manipulations of block diagrams. Thus they make it easier to create elaborate signal processor specifications involving many complicated components.

Openmixer: a routing mixer for multichannel studios

- *Fernando Lopez-Lezcano*

The Listening Room at CCRMA, Stanford University is a 3D studio with 16 speakers (4 hang from the ceiling, 8 surround the listening area at ear level and 4 more are below an acoustically transparent grid floor). We found that a standard commercial digital mixer was not the best interface for using the studio. Digital mixers are complex, have an opaque interface and they are usually geared towards mixdown to stereo instead of efficiently routing many input and output channels. We have replaced the mixer with a dedicated computer running Openmixer, an open source custom program designed to mix and route many input channels into the multichannel speaker array available in the Listening Room. This paper will describe Openmixer, its motivations, current status and future planned development.

Best Practices for Open Sound Control

- *Andrew Schmeder*

The structure of the Open Sound Control (OSC) content format is introduced with historical context. The needs for temporal synchronization and dynamic range of audio control data are described in terms of accuracy, precision, bit-depth, bit-rate, and sampling frequency. Specific details are given for the case of instrumental gesture control, spatial audio control and synthesis algorithm control. The consideration of various transport mechanisms used with OSC is discussed for datagram, serial and isochronous modes. A summary of design approaches for describing audio control data is shown, and the case is argued that multi-layered information-rich representations are necessary.