

Vision

Problem:

- Music = Voices.
- Voices want to be Parallel.
- Software just can't cut it.

Pygar

- Parallel System for Dealing with Multiple Voices
- Lots of SMIPS processors
- Each processor gets its own C program.

Steps

Code Reuse!

- ScratchPad
- RRR
- Lab 5 SMIPS Processor

News

We ran Pygar on an FPGA with 12 voices. This is something that no pure software mixer implementation is capable of doing.

Contributions

- Implemented *Pygar*, a system for quick parallel processing of audio.
- Implemented 4 basic algorithms which serve as components for this system (identity, bit-shift, volume-change, and delay)
- Demonstrated Pygar out-performs software-only systems. Pure-software systems have a limit of around 6 voices, while our system achieves 12 voices in parallel.