

News from the SoundScape Renderer

<http://spatialaudio.net/ssr/>

Matthias Geier

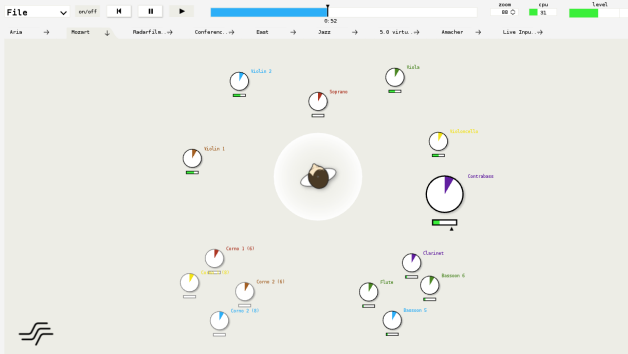
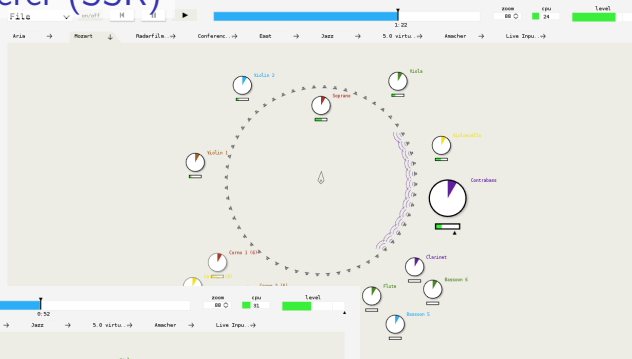
Lightning Talk

June 9, 2018

Linux Audio Conference, Berlin

SoundScape Renderer (SSR)

Graphical User Interface



SoundScape Renderer (SSR)

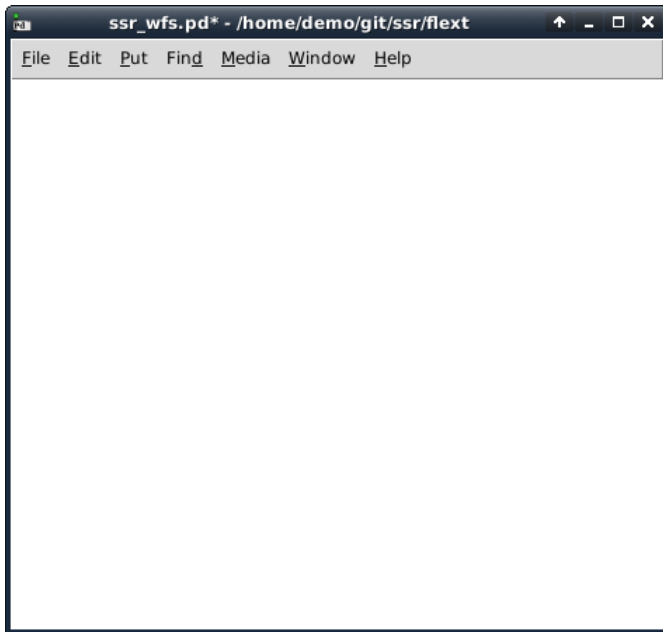
- ▶ several different reproduction methods
 - ▶ Binaural Renderer
 - ▶ Binaural Room Synthesis (BRS)
 - ▶ Wave Field Synthesis (WFS)
 - ▶ NFC-HOA Renderer (it's broken, though ...)
 - ▶ Vector Base Amplitude Panning (VBAP)
 - ▶ Ambisonic Amplitude Panning (AAP)
 - ▶ Generic Renderer

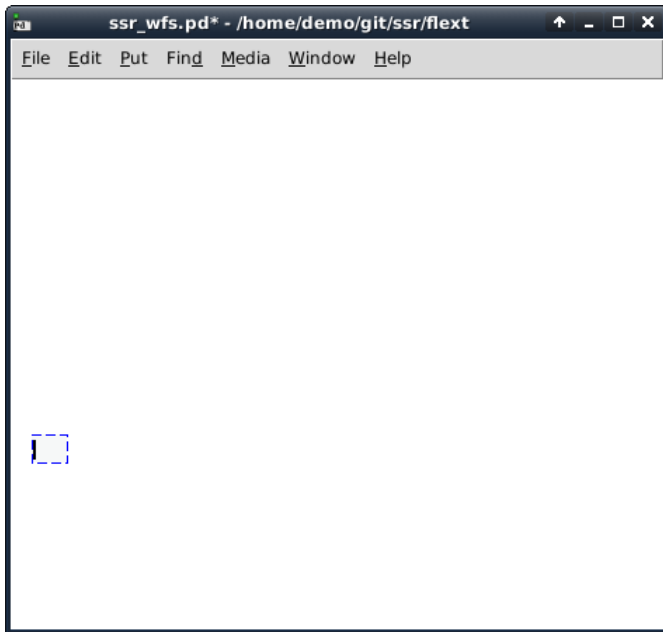
SoundScape Renderer (SSR)

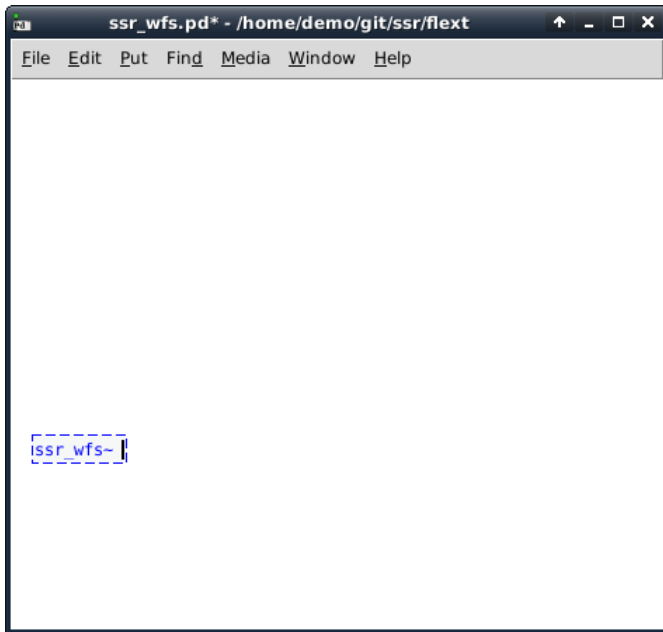
- ▶ several different reproduction methods
 - ▶ Binaural Renderer
 - ▶ Binaural Room Synthesis (BRS)
 - ▶ Wave Field Synthesis (WFS)
 - ▶ NFC-HOA Renderer (it's broken, though ...)
 - ▶ Vector Base Amplitude Panning (VBAP)
 - ▶ Ambisonic Amplitude Panning (AAP)
 - ▶ Generic Renderer
- ▶ runs on Linux and macOS (limited support for Windows)
- ▶ uses the *Jack Audio Connection Kit* (JACK)
- ▶ graphical user interface (Qt) and network interface (TCP/IP)
- ▶ Free and Open Source Software (GPLv3)
- ▶ <http://spatialaudio.net/ssr/>

SSR as a Library

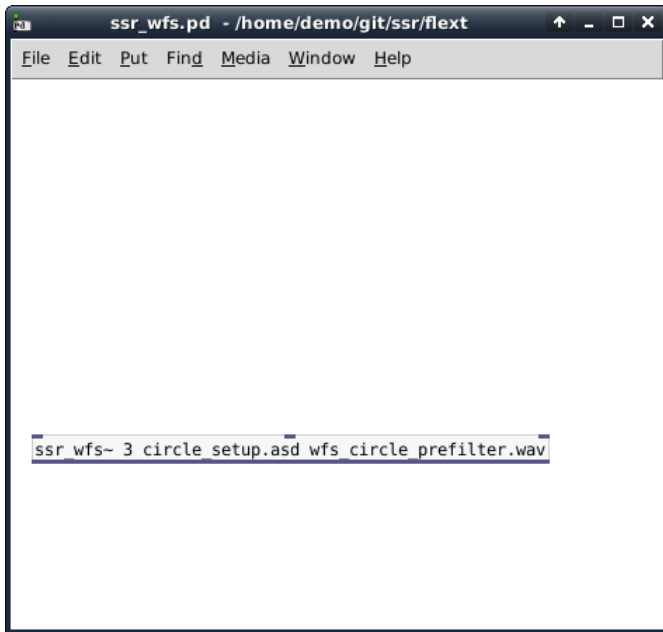
- ▶ renderers can be easily used in any C++ program
 - ▶ with multi-threading
- ▶ only audio processing
 - ▶ no JACK
 - ▶ no GUI
 - ▶ no network
 - ▶ no scene files
- ▶ ... as real-time plugin
 - ▶ e.g. PureData external
- ▶ ... for offline processing
 - ▶ e.g. MEX file for Octave/Matlab

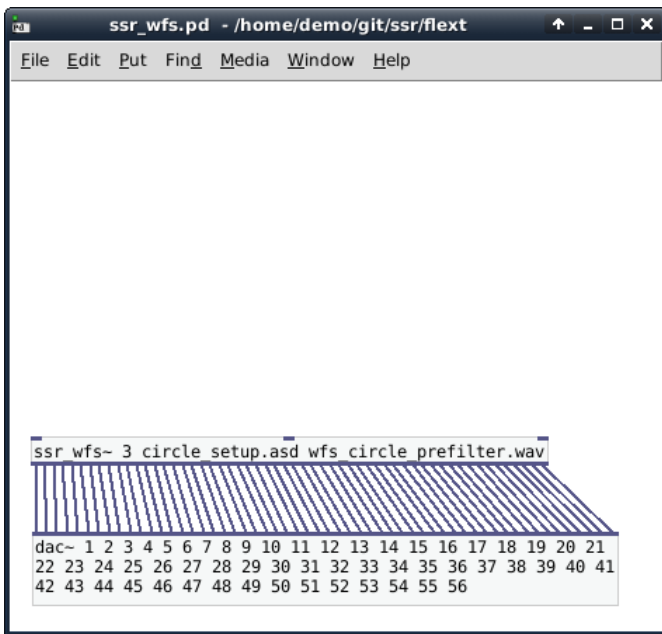


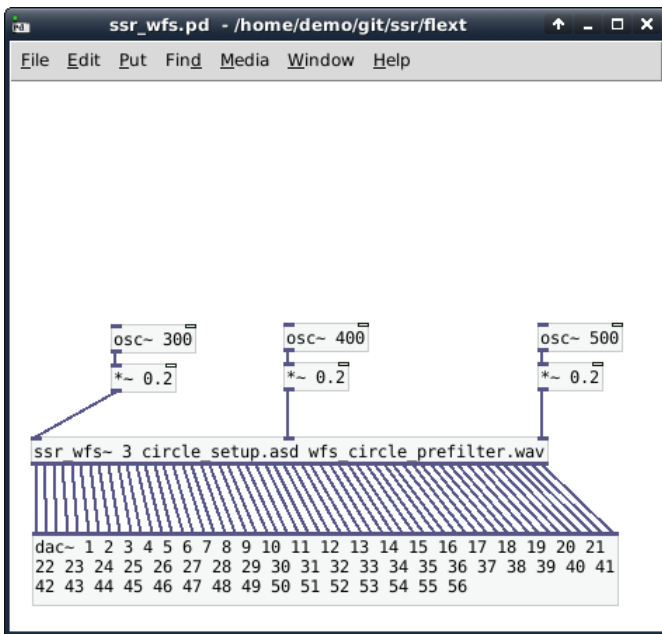


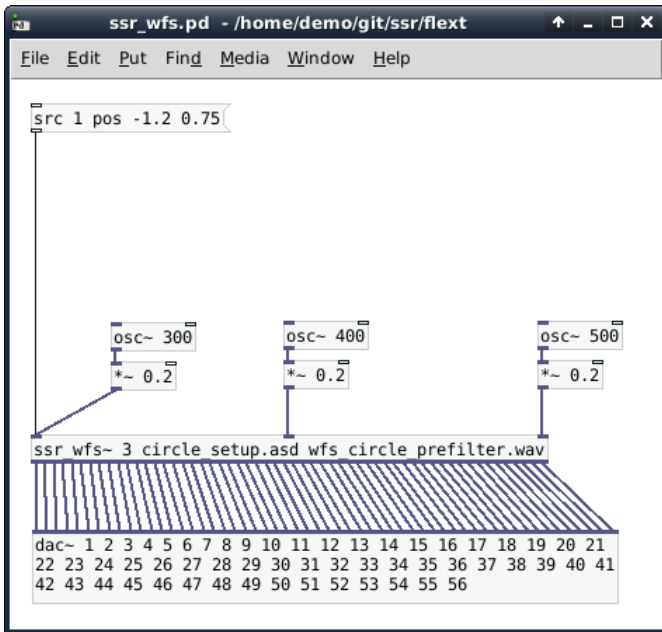


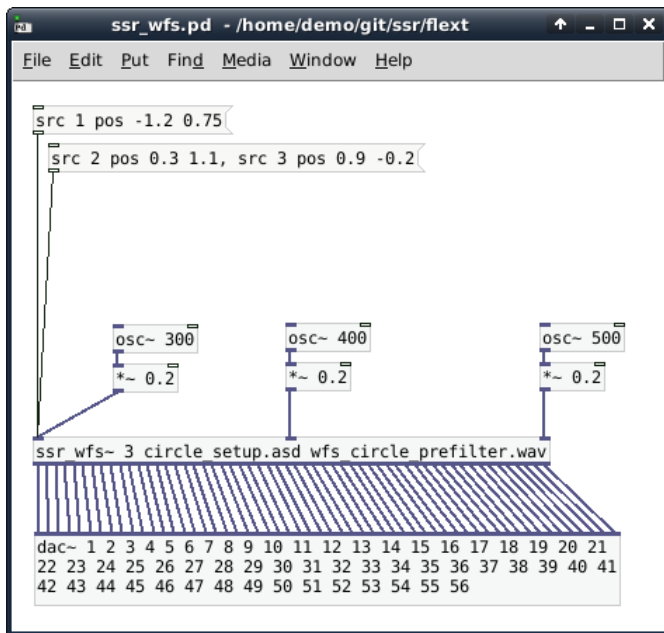


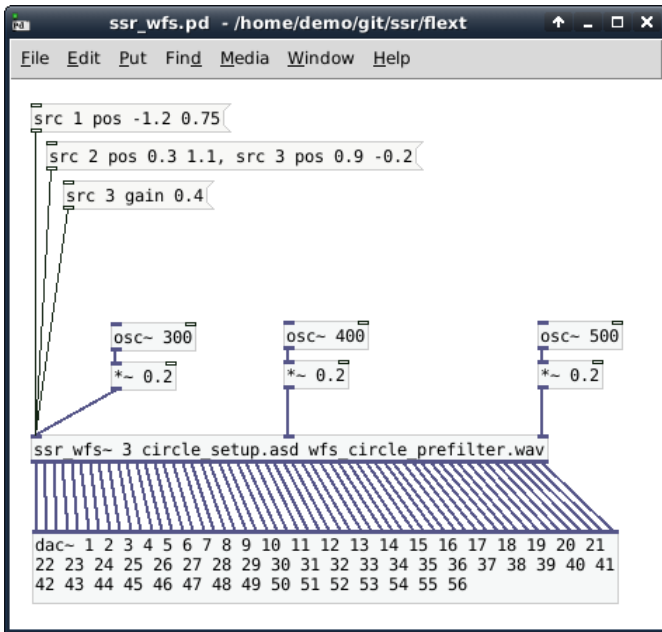


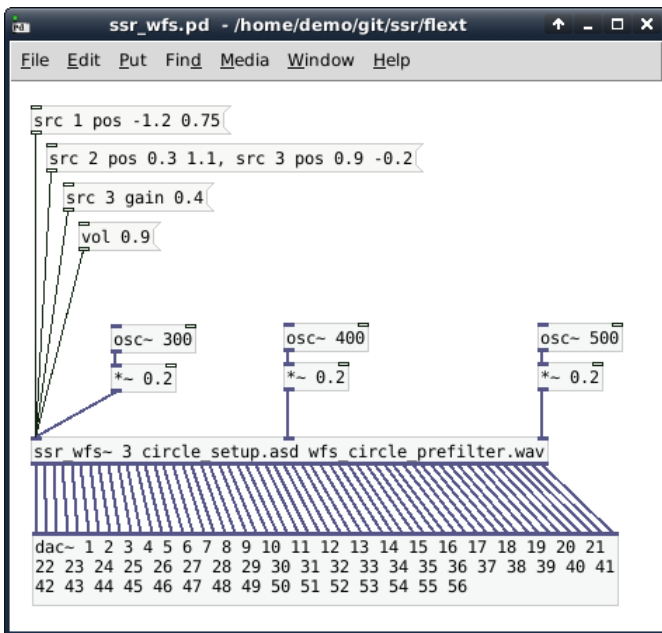


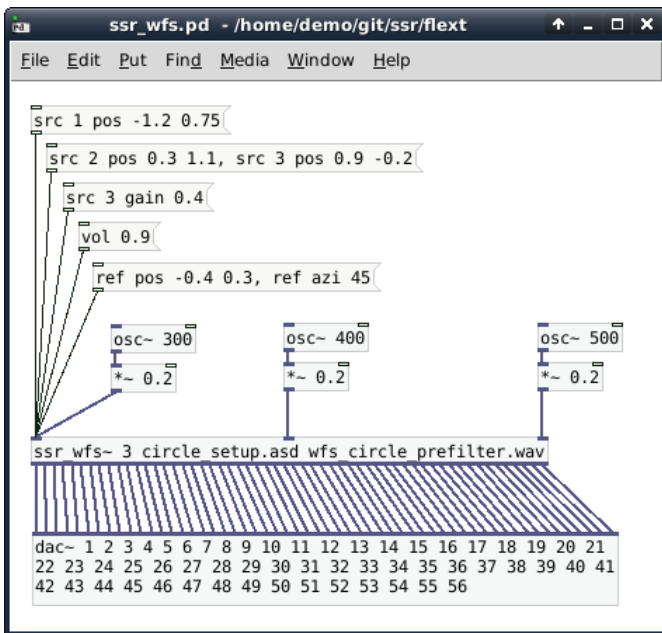












Current Limitations, Future Work

- ▶ extend to 3D
- ▶ dynamic scenes
- ▶ more network interfaces: WebSockets, OSC, ...?
- ▶ move to browser-based GUI (using WebGL)
- ▶ Python wrapper
- ▶ Pure Data package (Deken)?
- ▶ full Windows port?

Thanks for your attention!

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