

Massive leveraging of Flexbox using the JUCE C++ classes

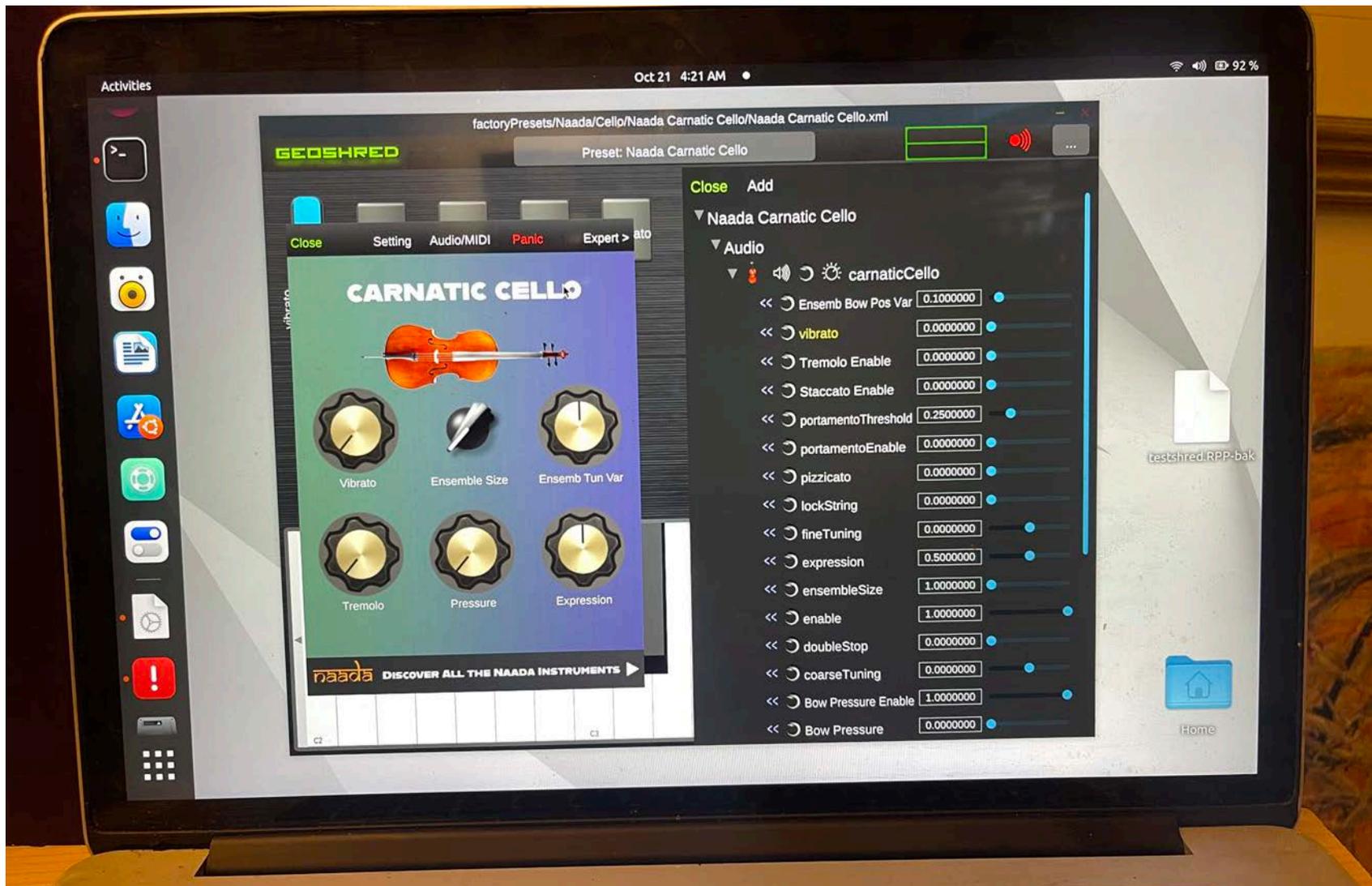
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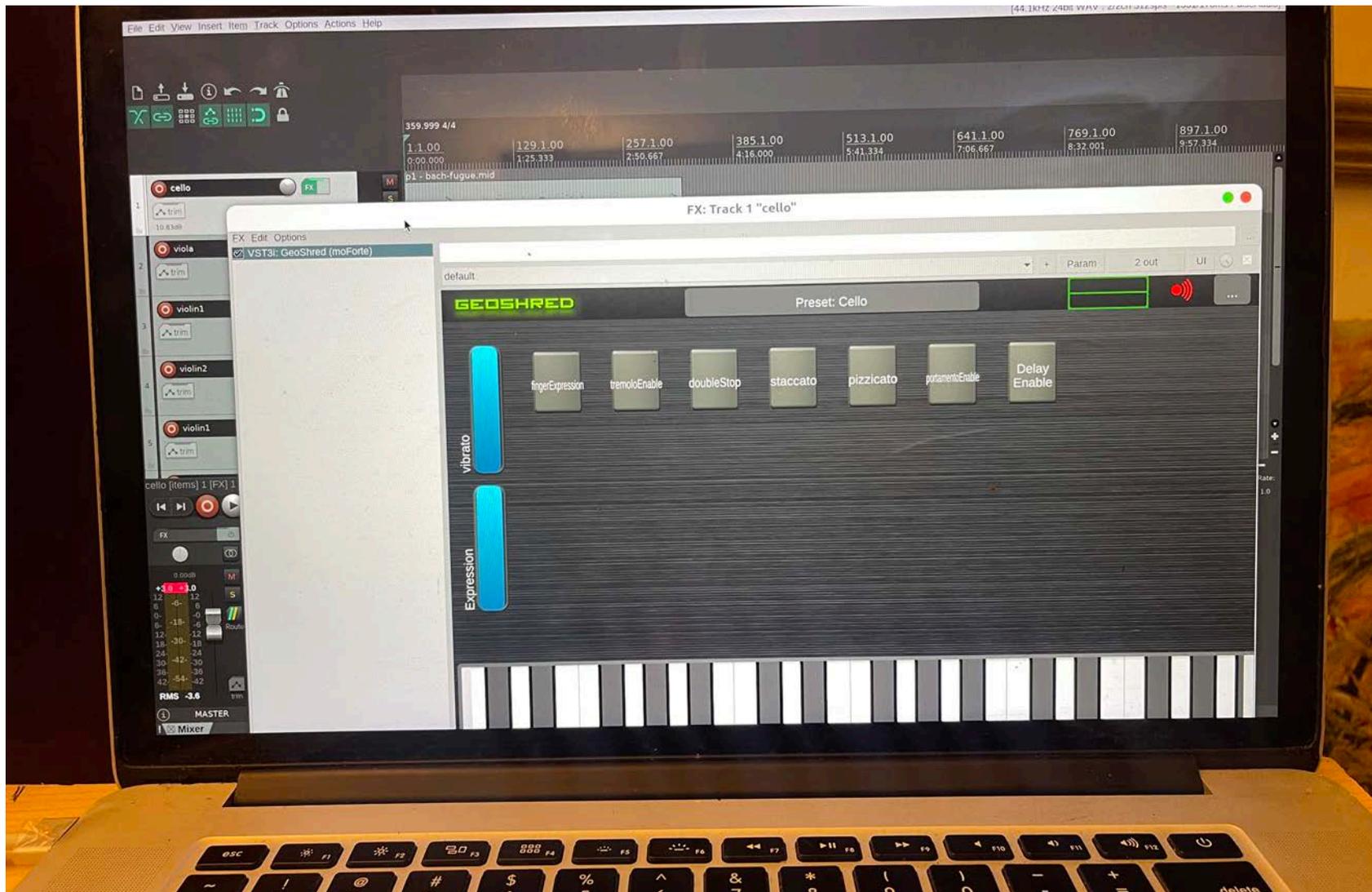


GeoShred iOS - new stuff coming!



GeoShred/Linux/JUCE Standalone

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GeoShred/Linux/JUCE Running under Reaper

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GeoShred/JUCE

- Portable: Linux/Windows/Android/macOS via [JUICE](#).
- Leverages [Plugin GUI Magic](#) for preset editing and UI editing. Thanks [Daniel Walz](#) for this amazing contribution!
- ValueTrees used extensively, thanks [David Rowland](#).
 - Communicate across different objects.
 - Undo/Redo
 - Simplifies code.

Plugin GUI Magic

- Flex/Box grid based on CSS standards
- Works like a responsive website.
- Main changes:
 - Multiple “magic editors”
 - Optimized load time.
 - Real-time styling of UI instead of either in edit mode or run mode.

Editors/Performance

- Preset Editor
 - Add new processors
 - See all parameters at once, drag to control surface.
 - MIDI learn/assign
- Control Surface Editor
 - Based on PluginGUIMagic - easy to make the preset look like anything
 - Video possible
- Keyboard
 - Rewrite of GeoShred keyboard, we already have a prototype.
 - Conventional MIDI keyboard from JUCE, plus new stylized one.
- GeoShred Control
 - Best controller for GeoShred is, uh, GeoShred!
 - Easy to connect from Mac.
 - Anybody want to try doing it from Linux?

Preset Format

- Attributed XML preset format - easy to edit
 - Each preset lives in it's own folder
 - Easy to edit and add new presets

~/Documents/GeoShred/Presets/userPresets/Naada/Cello:

[./Naada Carnatic Cello/Naada Carnatic CelloLayout.xml](#)

[./Naada Carnatic Cello/Naada Carnatic Cello.xml](#)

Audio and MIDI processors

- Main audio callback iterates over processors. It's all C++ little overhead.
- Greatly simplifies adding new processors - for audio and MIDI.
- Thanks [Jatin Chowdhury](#) for the idea!

```
// Then run the result through the fx chain
for (MFAudioProcessorWrapper *processor : instruments) {
    for (int channel=0; channel<MIN(numOutputChannels,numInsChannels); channel++) {
        int startSample = 0;
        mixerBufferP->addFrom (channel,
                               startSample,
                               *instrumentBuffer,
                               channel,
                               startSample,
                               numSamples);
    }
}

// Run result through the fx chain
// the amp is the last thing in the chain (enforced by GeoShred)
for (MFAudioProcessorWrapper *processor : effects) {
    processor->setNumOutputsLastProcessor(numChannelsRunning); // processing in-place => must
    provide this
    juce::AudioBuffer<float>* possiblyUpsampledBufferP = resampler->maybeResample(processor);
    processor->processBlock(*possiblyUpsampledBufferP, midiMessages);
}
```

Main Processing Loop

Build System

- CMake build system
 - Easy to target multiple platforms and plugin formats.
 - Thanks [Eyal Amir](#) for some great examples.

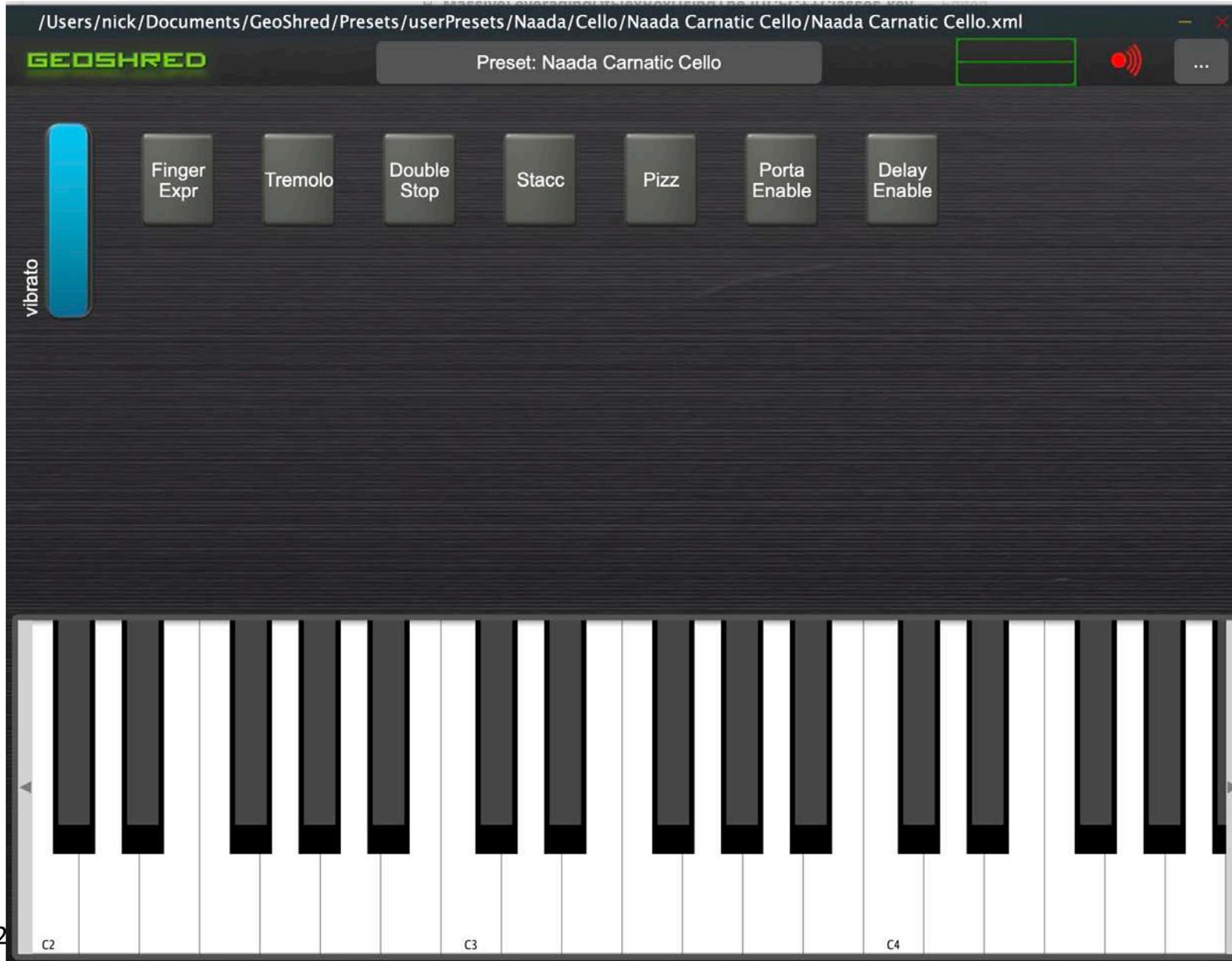
Development Environment: macOS/Linux/Windows on late 2013 MacBookPro

- Many thanks to [Leigh Smith](#) for showing this!
- Make boot drive from Ubuntu site.
- Get rEFInd boot manager
- Partition disks - ext4 for Linux, FAT for Windows
- Install packages for development environment
- Tweak CMake for Linux/Windows
- Might need to debug on Linux/Windows
 - Some differences in compiler behavior, wrt warnings and perhaps worse.

Naada Instruments

- Suthu (Suthambhara Nagaraj), a musician, GeoShred user, and signal processing engineer from Bangalore India.
- Studied Julius Smith's work and gave us a blow-away demo, then we integrated his instruments as JUCE plugins.
- Bansuri, Bass, Bass Clarinet, Carnatic Violin, Cello, Duduk, Erhu, Nadaswaram, Pan Flute, Rudra Veena, Sarangi, Shehnai, Saraswati Veena and Viola. And more to come, soon!
- Available now in GeoShred
- Got these running first on GeoShred/JUCE

Demo: GeoShred/JUCE macOS



When will it be available?

- Not sure, but the Mac Catalyst version will be available before JUCE/GeoShred
- In the meantime download GeoShred iOS!
 - Contact me for more information:
 - nick@ccrma.stanford.edu or nick@moforte.com