



Generative Synthesis/FX Processing in JUCE



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Summary

- My goal was to write a JUCE program to perform generative FM synthesis and FX processing, then run it on a Raspberry Pi
- Generative synthesis uses weights of different notes to randomly generate “music”
- Based on structure of neural network
- This can be useful for sleep, focus or mood without requiring artistic input

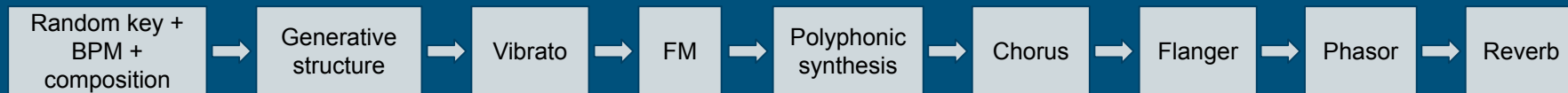
Purpose

- I'm obsessed with generative synthesis
- It is actually useful
- Untapped potential
- Raspberry Pi offers escape from common devices

Details

- Each time program runs, it
 - Generates new composition
 - Performs at random key and BPM (within bounds)
- Used Csound to flush out structure
- Translate syntax to JUCE
- ChatGPT pointing to syntax to include
- Implement syntax to reflect Csound outline
- Run on Pi

Diagram



Future

- CMAKE would not work on PI
- Find a way to run JUCE on Pi
- Find alternative tiny computer
- Implement in VST, website, VR
- Implement UI controls

Sources

<https://docs.juce.com/master/index.html>

<https://juce.com/learn/tutorials/>

<https://www.youtube.com/theaudioprogrammer>

https://www.youtube.com/channel/UCYngglRyl-8Hqo_hqilCdtA

<https://www.reddit.com/r/AudioProgramming/>