

Counterpoint Analysis and Synthesis: Update

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Background

- MusicTools (github.com/halfaya/MusicTools) library written in Agda, using Haskell for SMT / MIDI / MusicXML integration.
- Toolkit for analysis and synthesis of music. Lately focused on counterpoint.
- Previous Talks:
 - PNW PLSE 2018 (youtube.com/watch?v=xOOZi2MexRk) [starts at 34:55]
 - FARM 2019 (youtube.com/watch?v=2VAXSvG9n0A) with Youyou Cong
 - FARM 2022 (youtube.com/watch?v=znjisTSoKCE) **recommended**
 - AIM 31 (2022) (youtube.com/watch?v=n8TgyJNH-sk)

What's New

- MusicXML integration for input and output
- Run everything in Emacs, even when using Haskell integration, using `execTC`
- Second-species Counterpoint

Example Workflow

1. Write some music in notation software.
2. Export MusicXML and import into Agda in Emacs.
3. Analyze in Emacs using MusicTools.
4. Replace some range of the music with variables.
5. Send the music and constraints to SMT and solve.
6. Instantiate the solved variables into the music.
7. Write MusicXML and import into notation software.