**Potential Problems:**

* Melodies are composed of both pitch and rhythm: Need to produce 2 types of output - how to do with MIDI?
  + Pitch
  + Rhythm
* Datasets:
  + Ideally monophonic melodies avoid problems
    - If polyphonic, need to figure out how to separate channels, but also may not be appropriate for the type of song, e.g. Bach fugue
  + Assessing ‘melodic similarity’: Genre labels or some similarity measure

Train and test set needs to be consistent (homogenous dataset)

- Not a large # of styles in train set

- You end up with e.g. folk dataset songs, bach (don't merge. If you do merge, and have eg genre dependency, input conditioning)

- Richard paper ISMIR: Remixing. Input stuff, then compute e.g. distributions (paper from our lab). There is no good evaluation for evaluative systems - easy to do objective (no good), worse than listening test - but easier. Show that you choose metrics u do because most feasible. Stronger to have both objective/subjective measure even if u don't have enough listening subjects.

- Systematic difficulties:

- LSTMS are short term structure

- Find something that trains over multiple bars - longer term

**Bibliography Notes**

**Musical Inpainting:**

* <https://github.com/ashispati/InpaintNet>

**Musical Style Transfer:**

* <https://ashispati.github.io//style-transfer/>

**Magenta Model:**

* <https://github.com/magenta/magenta/tree/master/magenta/models>
  + melody\_rnn
  + pianoroll\_rnn (polyphonic music generation)
  + polyphony\_rnn
  + drums\_rnn

**MIDI Embedding:**

[1] “I Made an AI that Learned to Make Music,” Able. https://able.bio/GalacticGlum/i-made-an-ai-that-learned-to-make-music--620lxbn (accessed Mar. 21, 2021).

[2] S. Oore, I. Simon, S. Dieleman, D. Eck, and K. Simonyan, “This Time with Feeling: Learning Expressive Musical Performance,” arXiv:1808.03715 [cs, eess], Aug. 2018, Accessed: Mar. 21, 2021. [Online]. Available: <http://arxiv.org/abs/1808.03715>.