Generating melodies with RNN-LSTM

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What you'll learn

- Generate melody with NN
- Build and train LSTM network with Keras
- Handle time-series data
- Basic understanding of symbolic music representation
- Basic music theory concepts (e.g., pitch, duration, key)
- Preprocess symbolic music

Prerequisites

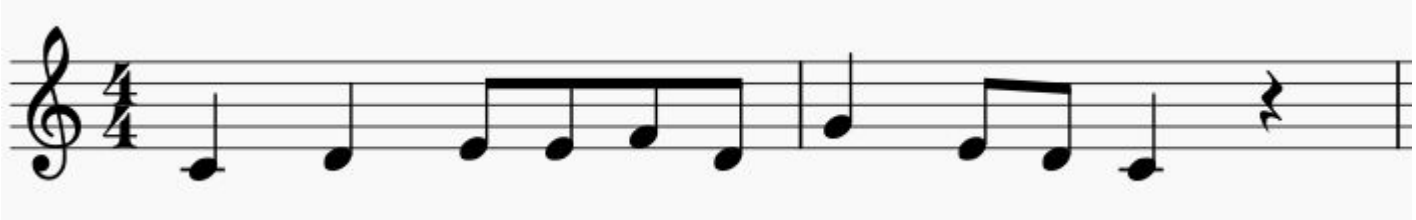
- Intermediate Python
- Familiar with TensorFlow/Keras [advisable but not necessary!]

Tools and libraries

- Keras/TensorFlow
- Music21
- MuseScore

Melody

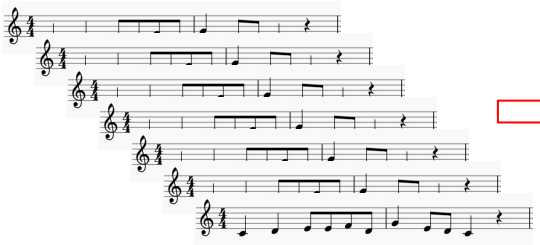
- Sequence of notes and rests



Melody generation problem

- Treat melody as a time series
- Time-series prediction problem
- Vocabulary of notes

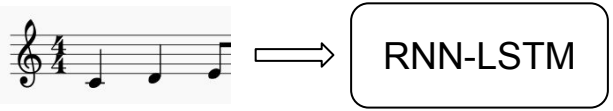
The melody generator (training)



RNN-LSTM

Predict next note
in the melody

The melody generator (inference)



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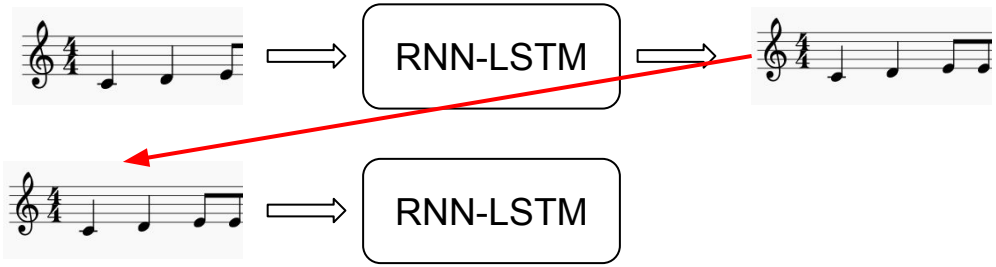

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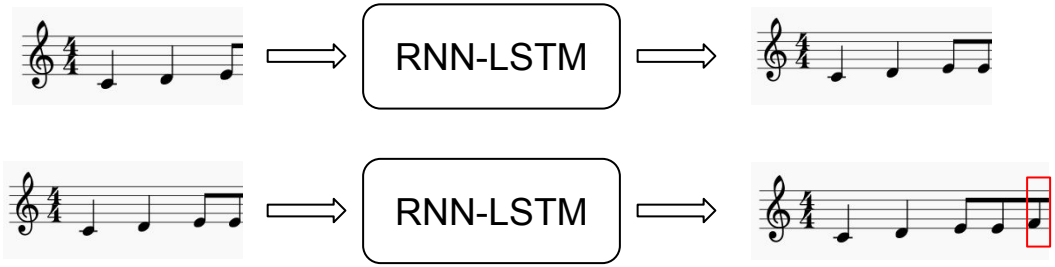

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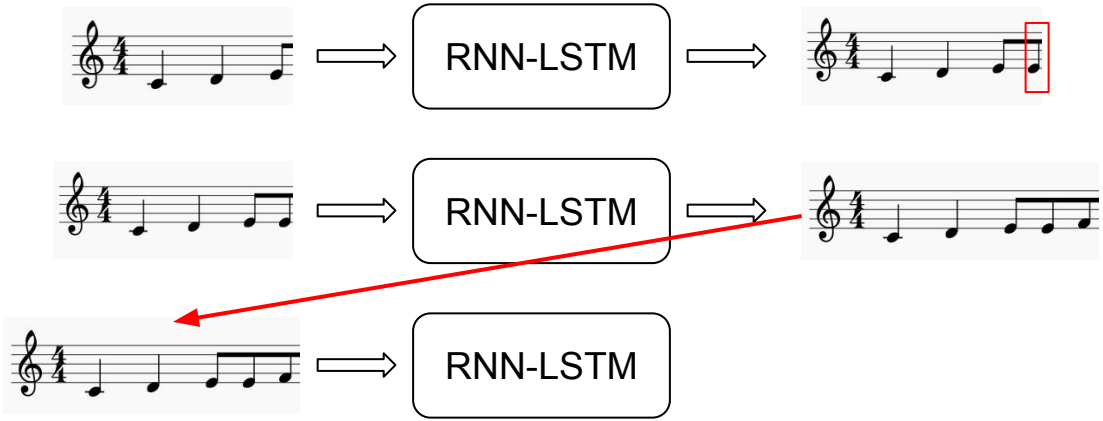

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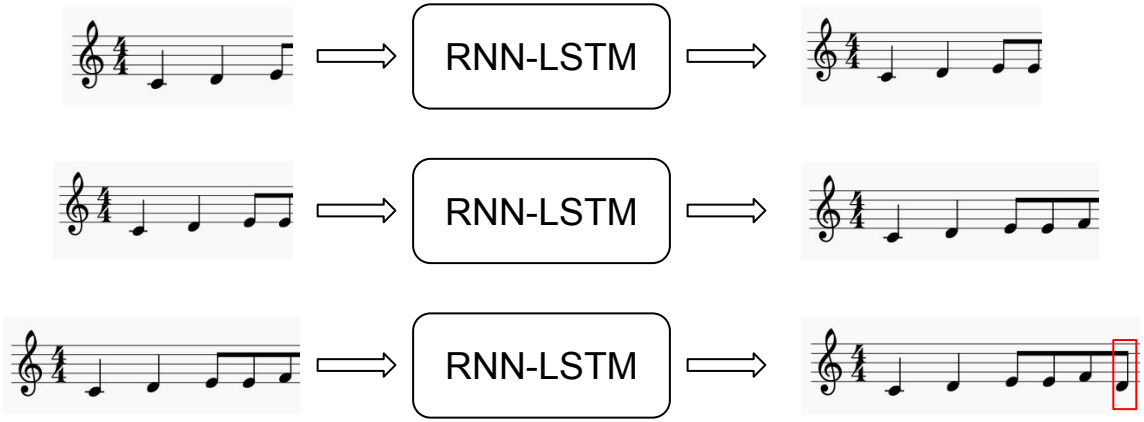

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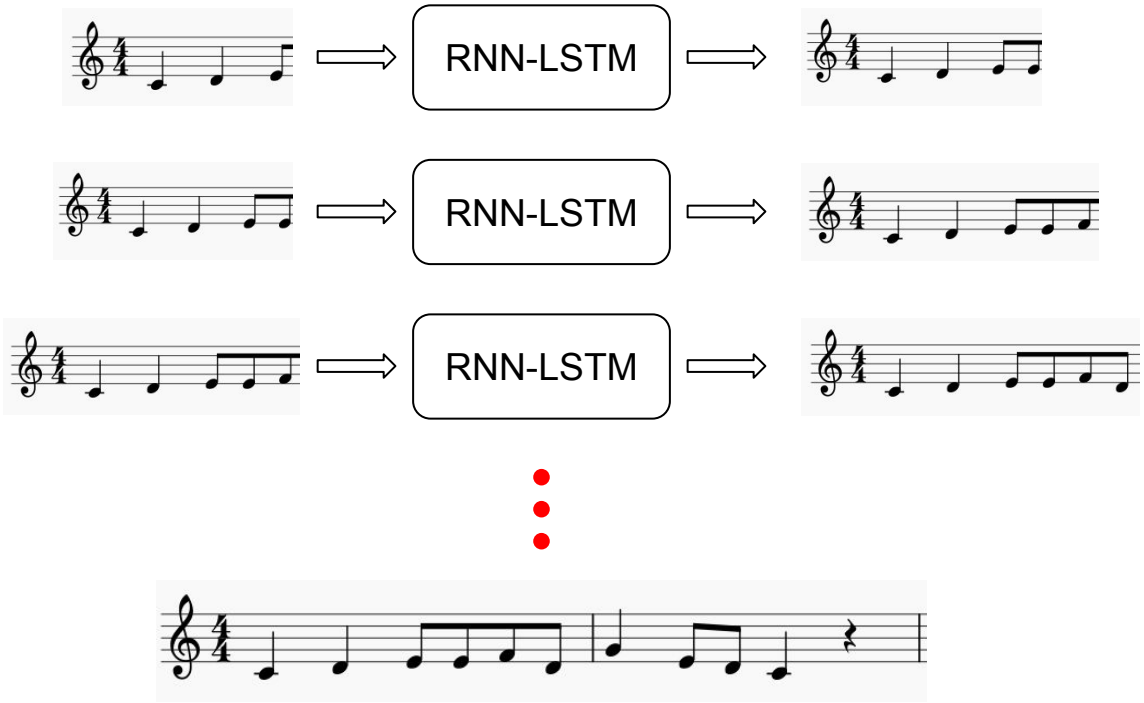

Why do we use an RNN-LSTM?

- Melodies have long-term structural patterns

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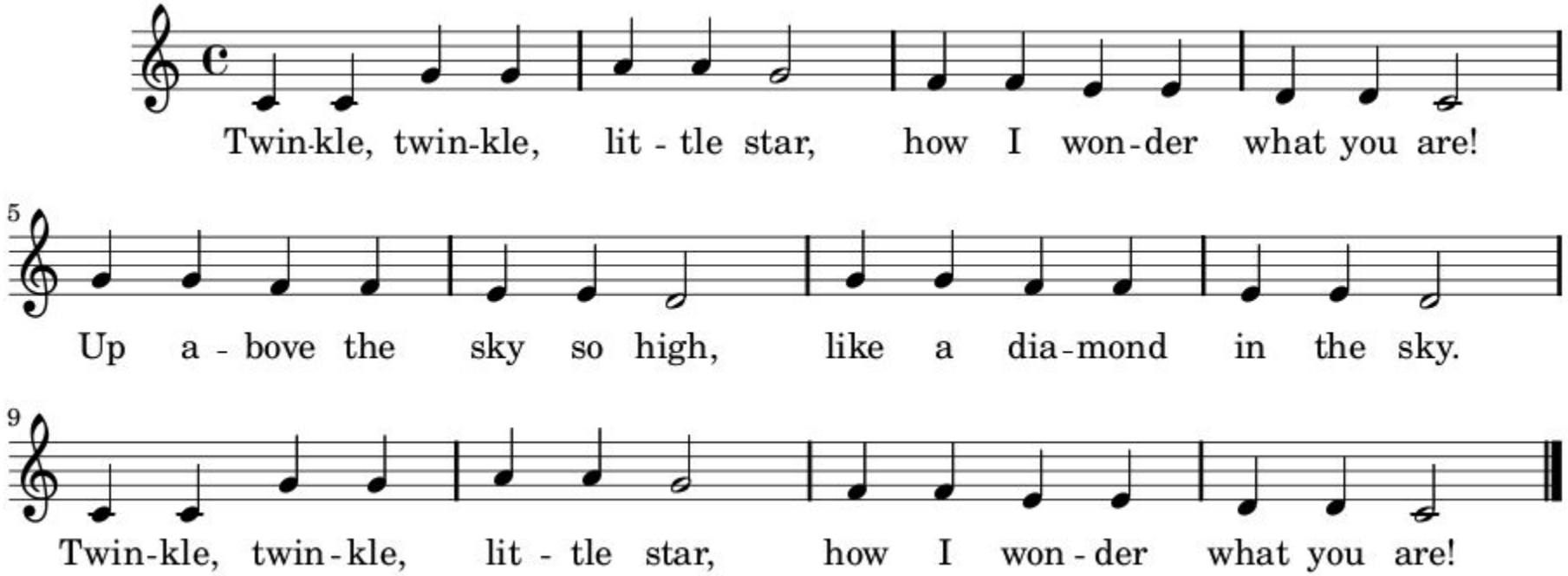

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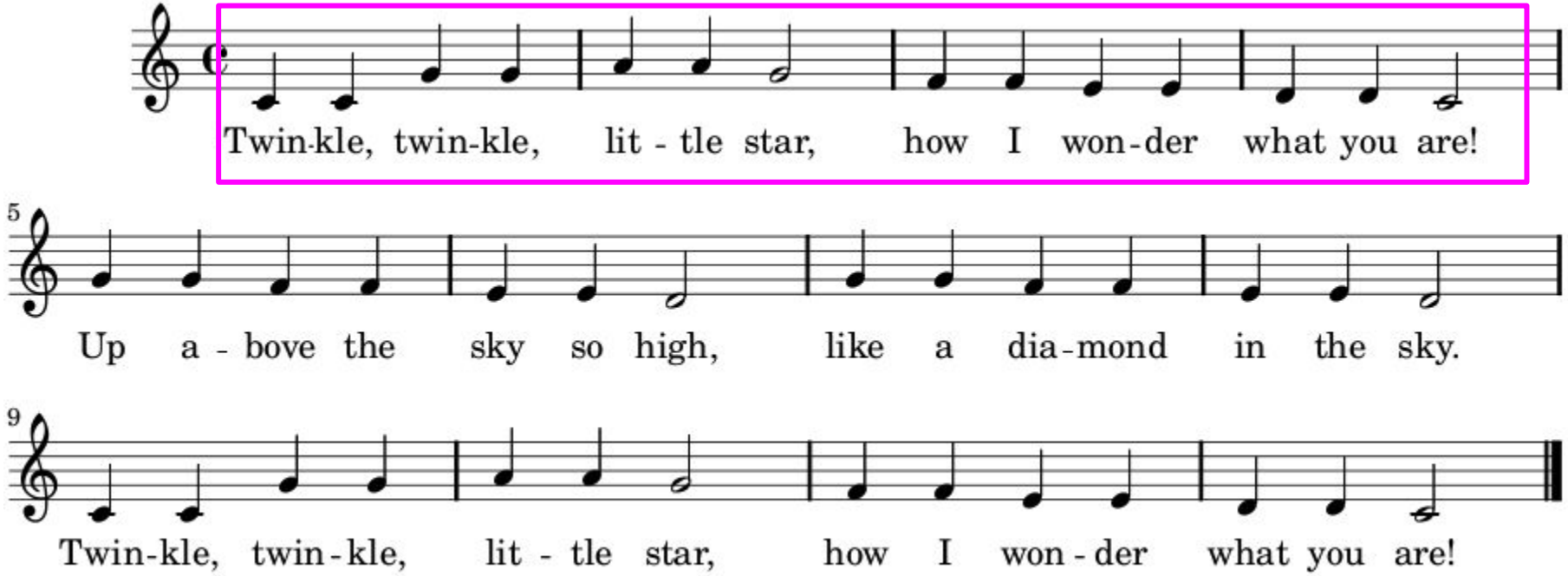

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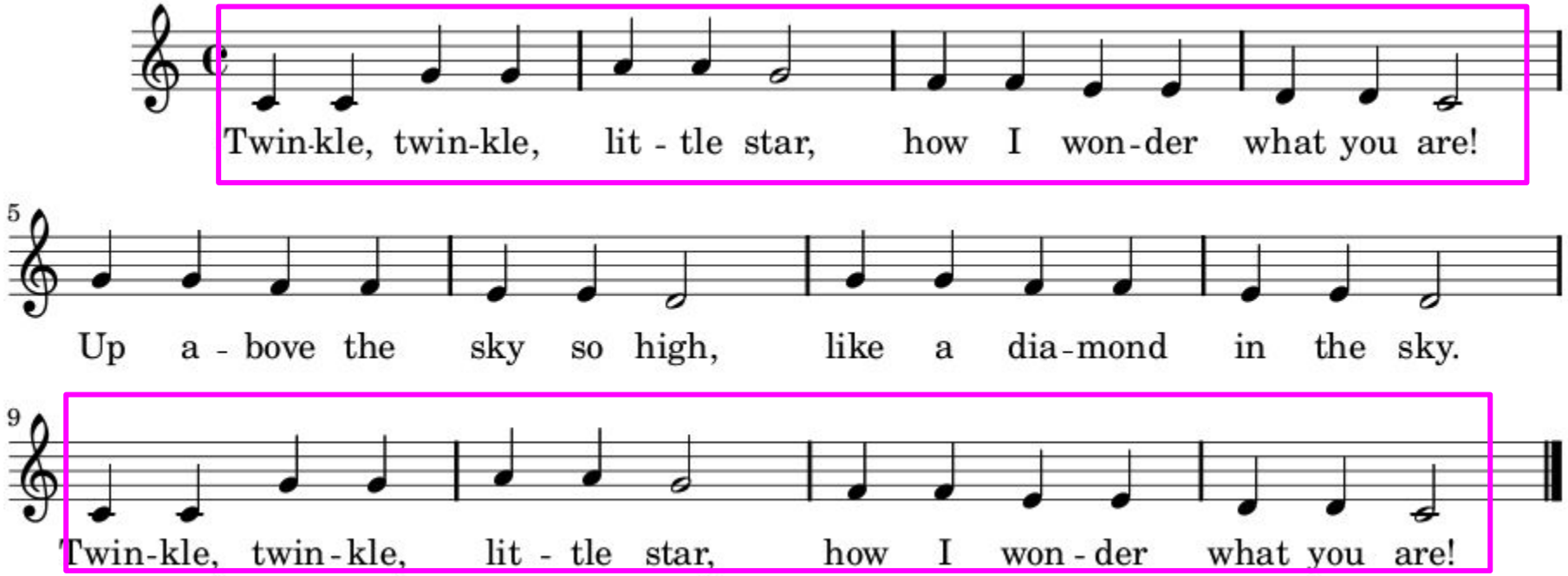

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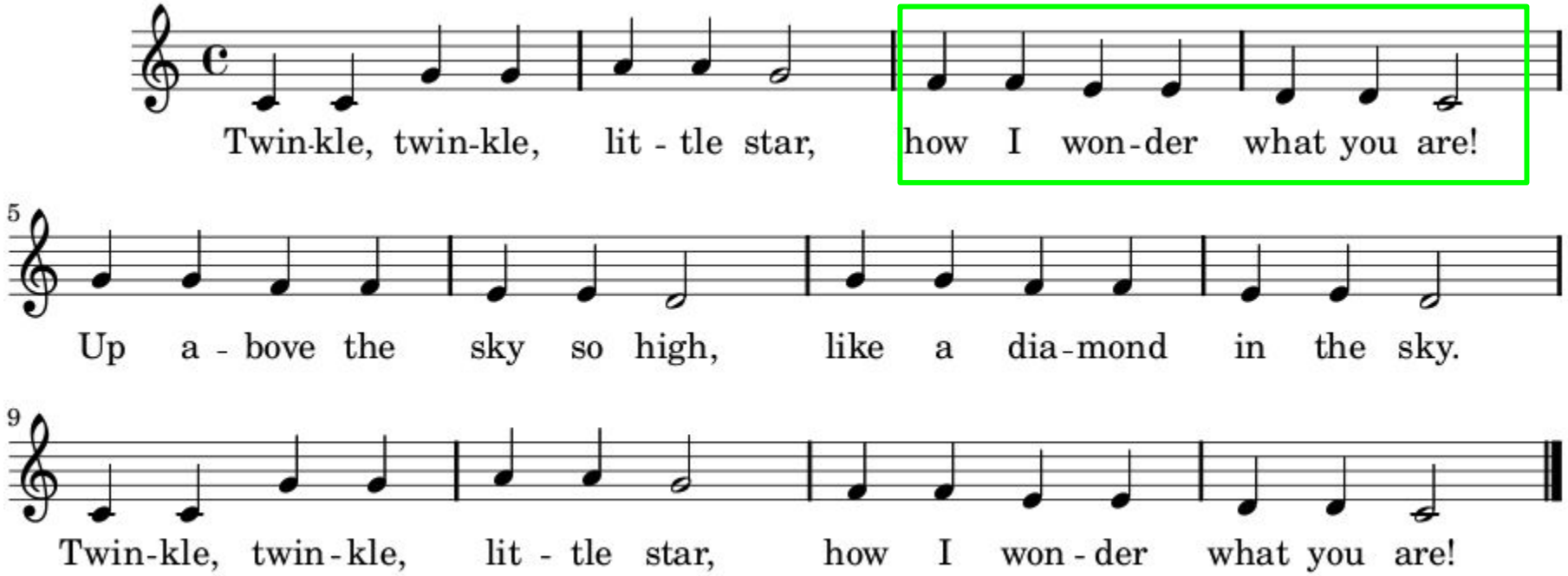

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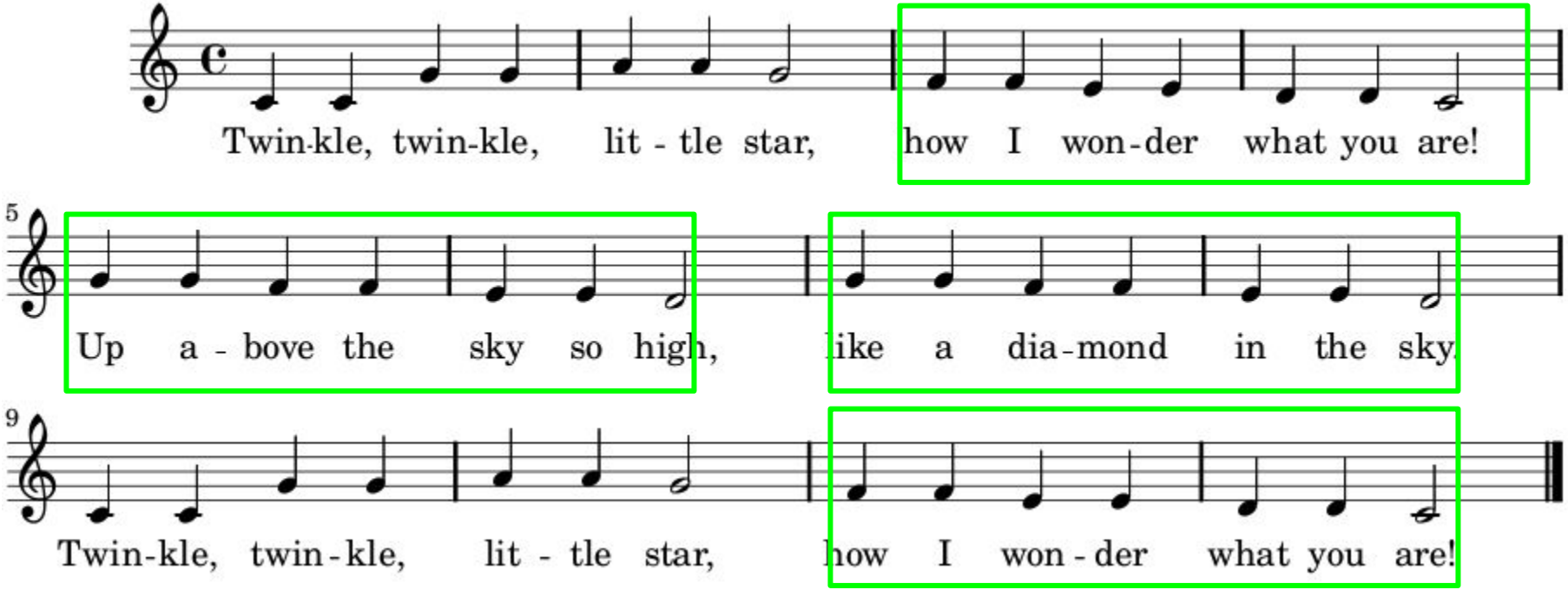

Why do we use an RNN-LSTM?

- Melodies have long-term structural patterns
- LSTMs capture long-term temporal dependencies

The melody dataset

- Traditional folk melodies
- ESAC dataset 5K+ songs from all over the world

What next?

- Music concepts + symbolic music representation