Input Text A:
The tune "Twinkle, Twinkle, Little Star" is a popular English lullaby.

Output Tune A:
L:1/4
M:4/4
K:C
C C G G | A A G2 | F F E E | D D C2 | G G F F | E E D2 | G G F F | E E D2 | C C G G | A A G2 |
F F E E | D D C2 |]

Input Text B:
Lead sheet of the popular English lullaby "Twinkle, Twinkle, Little Star".

Output Tune B:
L:1/4
M:4/4
K:C
"C" C C G G |"F" A A"C" G2 |"G" F F"C" E E |"G" D D"C" C2 |"C" G G F F |"Em" E E"G" D2 |
"C" G G"F" F F |"Em" E E"G" D2 |"C" C C G G |"F" A A"C" G2 |"G" F F"C" E E |"G" D D"C" C2 |]

Input Text C:
Jazz arrangement of the popular English lullaby "Twinkle, Twinkle, Little Star".

Output Tune C:
L:1/8
M:4/4
K:F
"F" A3 G"Dm7" A c2 G |"Gm7" A B2"C7" G- G4 |"Gm7" d3 c"C7" d f2 c |"Gm7" f4-"C7" f2 z c |
"F" d3 c"F#dim7" d f2 c |"Gm7" f f2 d"A7b9" f2 z c |"Dm7" d3 c"G7" d f2 c |"C7" e4-"F#dim7" e2 z2 |
"Gm7" g3 f"C7" g b2 g |"F6" c' a2 f"Bb7" c'2 z c' |"Gm7" d'3 c"C7" d' f2 c |
"F""Bbm6" f4-"F" f2 z2 |"Dm7" f3 d"G7" f a2 f |"Gm7" b g2 f"C7" b2 z g |
"F" a3 g"Dm7" a c'2 g |"G7" a f2 d"A7b9" f2 z c |"Dm7" d3 c"G7" d f2 c |
"C7" e4-"F#dim7" e2 z2 |"Gm7" g3 f"C7" g b2 g |"F6""Bbm6" c' a2 f"A7b9" c'2 z c' |
"Dm7" d'3 c"G7" d' f2 c |"C7" e4-"F#dim7" e2 z2 |"Gm7" g3 f"C7" g b2 g |
"F6" c' a2 f"Bbm6" c'2 z c' |"Gm7" d'3 c"C7" d' f2 c |"F""Bbm6" f4-"F" f2 z2 |]

Input Text D:
Note Length-1/8
Key-D
Source-Dance Music of Ireland
Meter-6/8

Output Tune D:
L:1/8
M:6/8
K:D
f/e/ | dAA AFA | BGB A2 (f/e/) | dAA AFA | g3 f2 e | dAA AFA | BGB A2 f | aba gfe | fdd d2 ::
(a/g/) | (f/g/a)b b2 a | (f/g/a)b b2 a | (f/g/a)b faa | e2 f gfe | (f/g/a)b b2 a | (f/g/a)b b2 a | gfg eag | fdd d2 :|

Input Text E:
This is a traditional Irish dance music in the key of D and its meter is 6/8.

Output Tune E:
L:1/8
Q:1/4=100
M:4/4
K:C
CDE GAB | cde d2 B | cdc edc | B3 d3 | CDE GAB | cde d2 B | cde GAB | c3 c3 :: g2 g gfe |
f2 f fed | e2 e edc | d2 d dcB | CDE GAB | cde d2 B | cdc GAB | c3 c3 :|

Figure 2: Music generation examples of RND

space constraints, we only show RND-generated examples. We first tested whether the model could reproduce the tunes already present in Textune. The tune chosen here is "Twinkle, Twinkle, Little Star", which was present in Textune a total of 11 times. We found that when top-p was set to a low value (e.g., 0.5), the model almost always reproduced the tune perfectly, as shown in Fig. 2A. This means that the model does understand the relationship between the title and the tune. However, this also indicates that it is possible for the model to directly copy the music that exists in Textune. We recommend using a higher top-p when generating tunes using this model to avoid that problem. We then tested the creativity of the model: generating the lead sheet and the jazz arrangement of "Twinkle, Twinkle, Little Star". According to Fig. 2B, the model does understand what a lead sheet is and succeeds in placing appropriate chord symbols for this tune. It should be noted that Textune does not contain any

lead sheets for this tune. This demonstrates the potential of language-music models to be applied to the melody harmonization task. However, for the more creative task, melody style transfer, the model did not perform well. The tune in Fig. 2C, although it does have a very distinctive jazz style (e.g., rhythm, harmony), has a completely different melody from "Twinkle, Twinkle, Little Star". Given that the model can perform well on the melody harmonization task, we believe that the reason for its failure on the melody style transfer comes mainly from the small amount of text-music data. If the size of text-music datasets can reach the level of text-image datasets (**?**), achieving most music generation tasks, including those requiring a high degree of creativity, should not be a challenge anymore. We finally tested whether the model can follow the objective meta-information (e.g., key, meter) given in the text to generate tunes. We specified the key (D major), the meter (6/8), and the style of the music (Irish dance music). As shown in Fig. 2D and Fig. 2E, whether or not the model can generate music that matches the meta-information given in the text description depends on its format. When describing meta-information in a list format (Fig. 2D), the model can always follow the text accurately to generate tunes. The generated tune also exhibits distinctive characteristics of Irish dance music. For example, traditional Irish music is usually in a binary form (AABB), and the music generated here is exactly composed in that way. However, when the same information is given in a more loose way (Fig. 2E), the model does not follow the description well enough, even with a low top-p = 0.5. Although the actual meter of this generated tune is still 6/8 and is in keeping with the characteristics of Irish music, the generated music is in the key of C major and the meter in the header is 4/4. We tested this text format on the dual task (i.e., music-to-text generation) and found that when given the prompt "... in the key of", the model can always retrieve the meta-information correctly. Theoretically, the two tasks should be of equal difficulty, i.e., correctly translating the text to the header of ABC tunes or vice versa. More investigation is needed to determine the causes of this problem.

Conclusions

In this paper, we carry out the study of language-music models trained on large-scale text-music data. According to the experimental results, the use of pre-trained checkpoints leads to generated tunes that are much more similar to ground truth, but not improved in terms of diversity. Although the model can generate tunes that matched the semantic information of the text and exhibited a certain degree of creativity on some tasks, its creativity is limited, and it is input-sensitive. With a larger dataset, it is likely to develop a language-music model that performs well in music generation tasks that require a high degree of creativity. Voluptates eligendi quas labore ex, alias eveniet itaque ducimus odio quis aperiam dolor sunt, impedit nobis libero maiores odit magnam mollitia, ad eveniet adipisci pariatur.Amet quaerat eius iure in similique esse debitis sed reprehenderit alias, dicta ratione suscipit voluptas?Delectus amet quod corporis nam molestiae aperiam voluptatibus maiores, deserunt ipsum molestias cupiditate eum dicta officiis iure, debitis

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