

# *Symbolic Music Genre Transfer with CycleGAN*



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Monet  $\leftrightarrow$  Photos



Monet  $\rightarrow$  photo

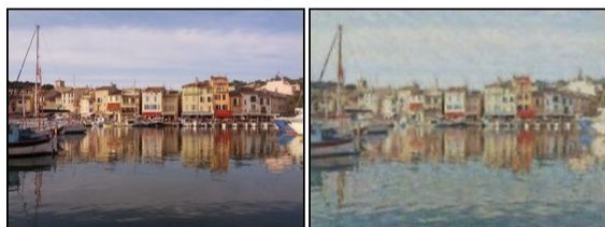
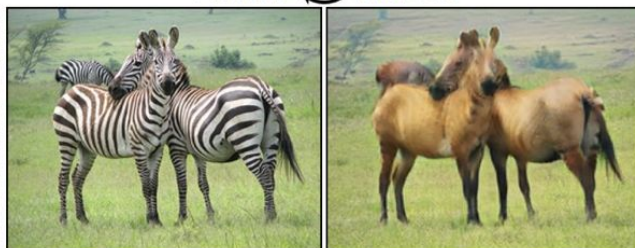
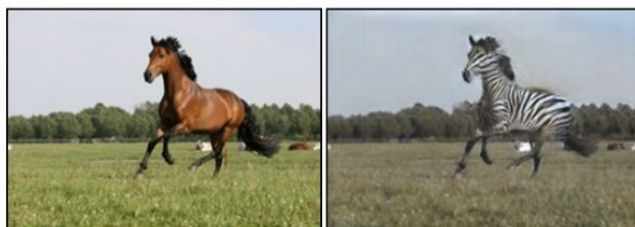


photo  $\rightarrow$  Monet

Zebras  $\leftrightarrow$  Horses



zebra  $\rightarrow$  horse

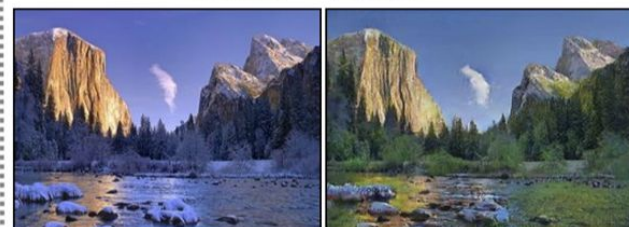


horse  $\rightarrow$  zebra

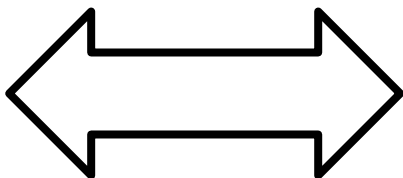
Summer  $\leftrightarrow$  Winter



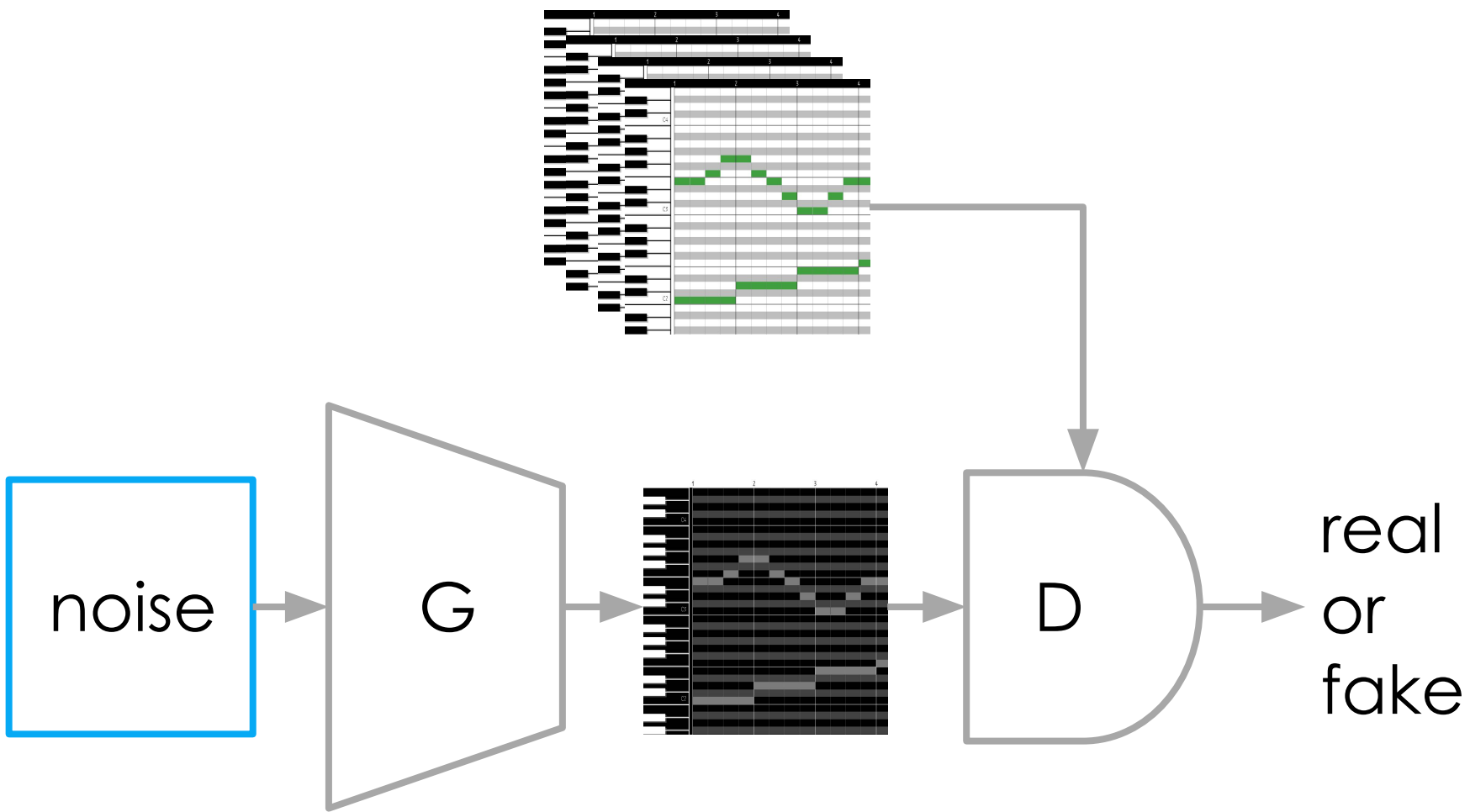
summer  $\rightarrow$  winter

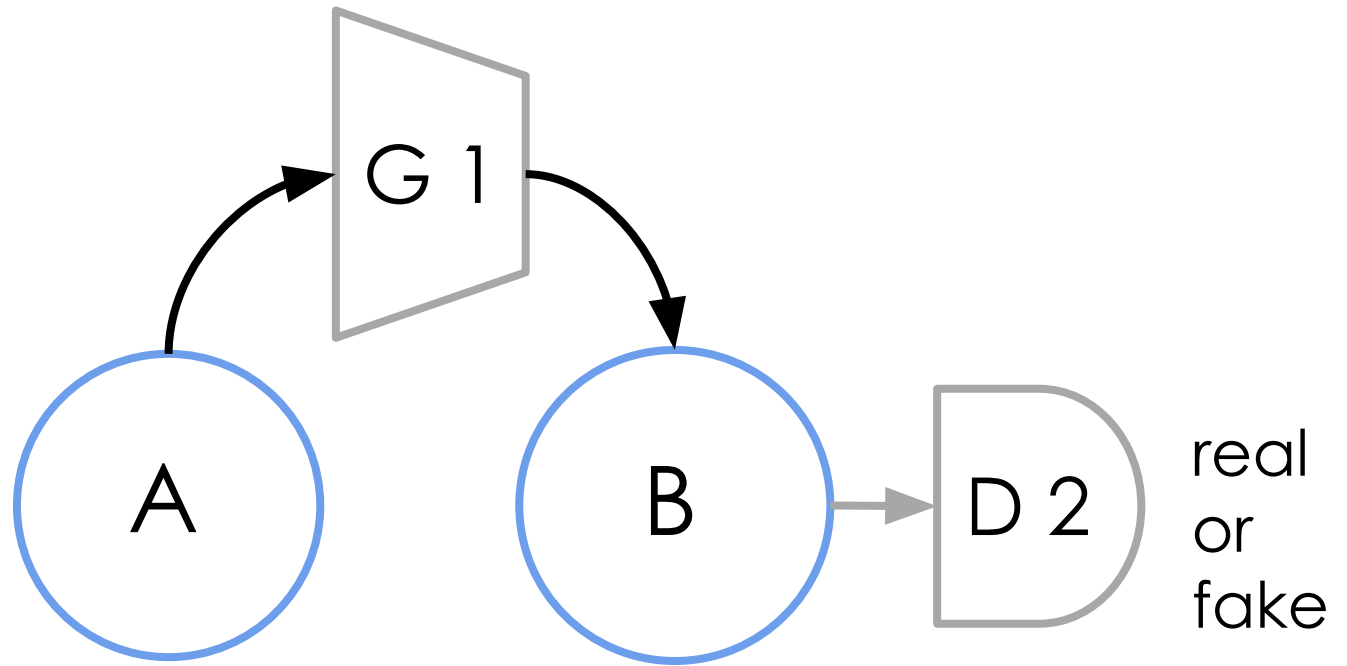


winter  $\rightarrow$  summer

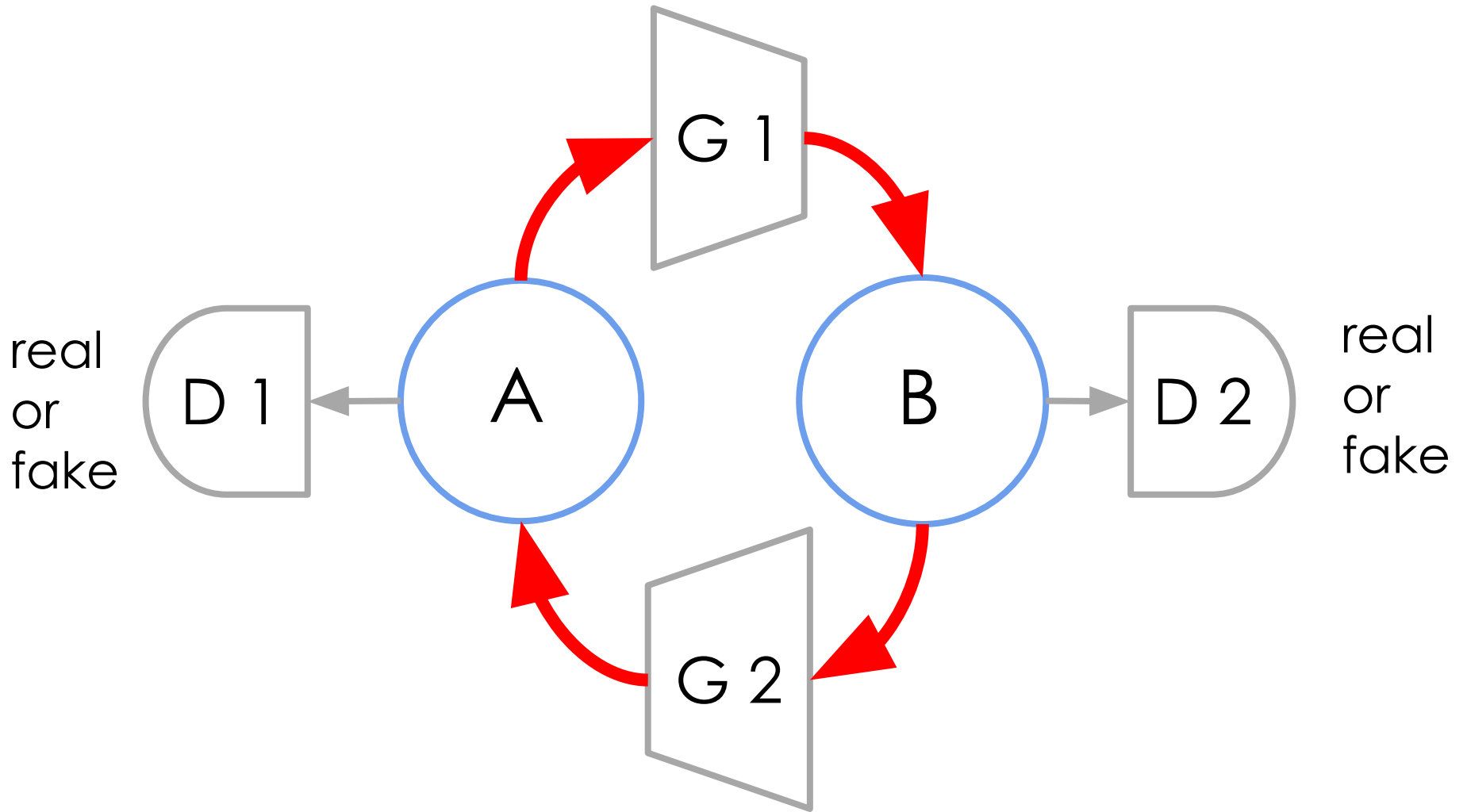


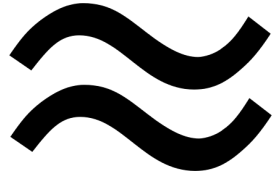
Jazz, Classic, Pop...?





# Cycle Consistency!

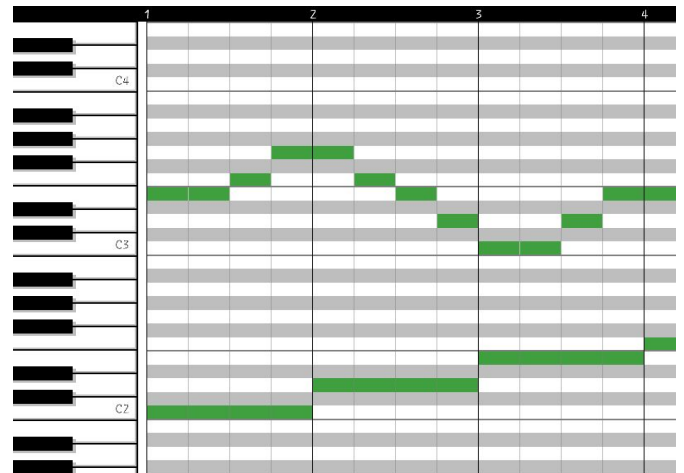


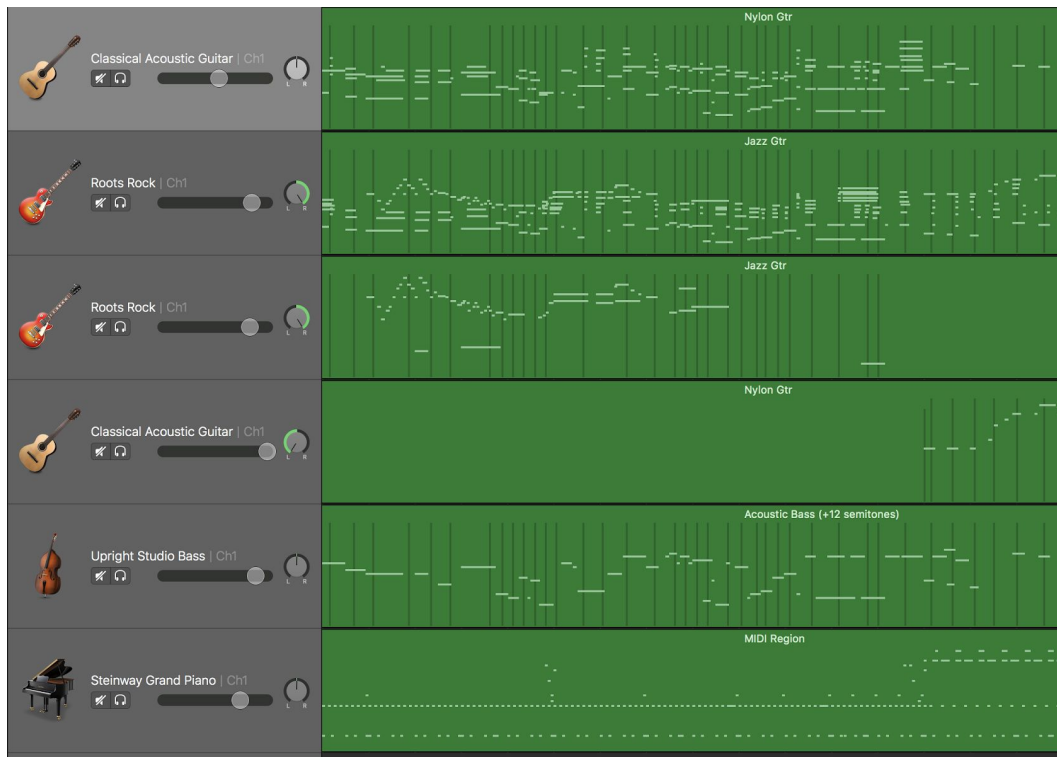


**MIKI**



Piano Roll

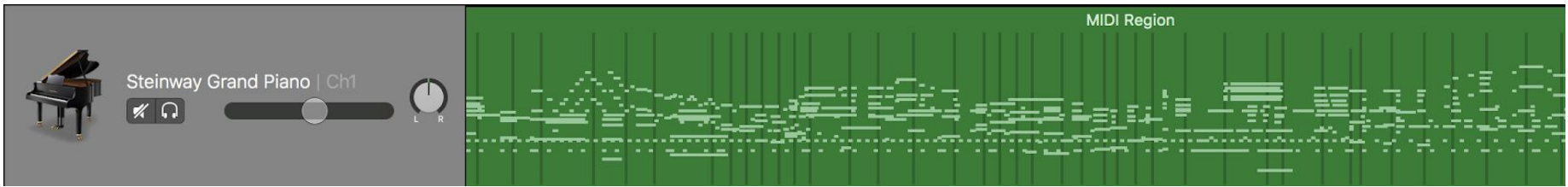




Discard  
Instrumentation





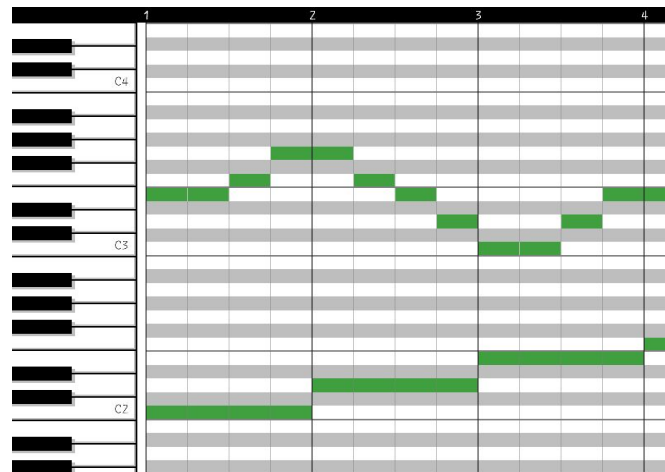


Discard velocity



# Piano Roll

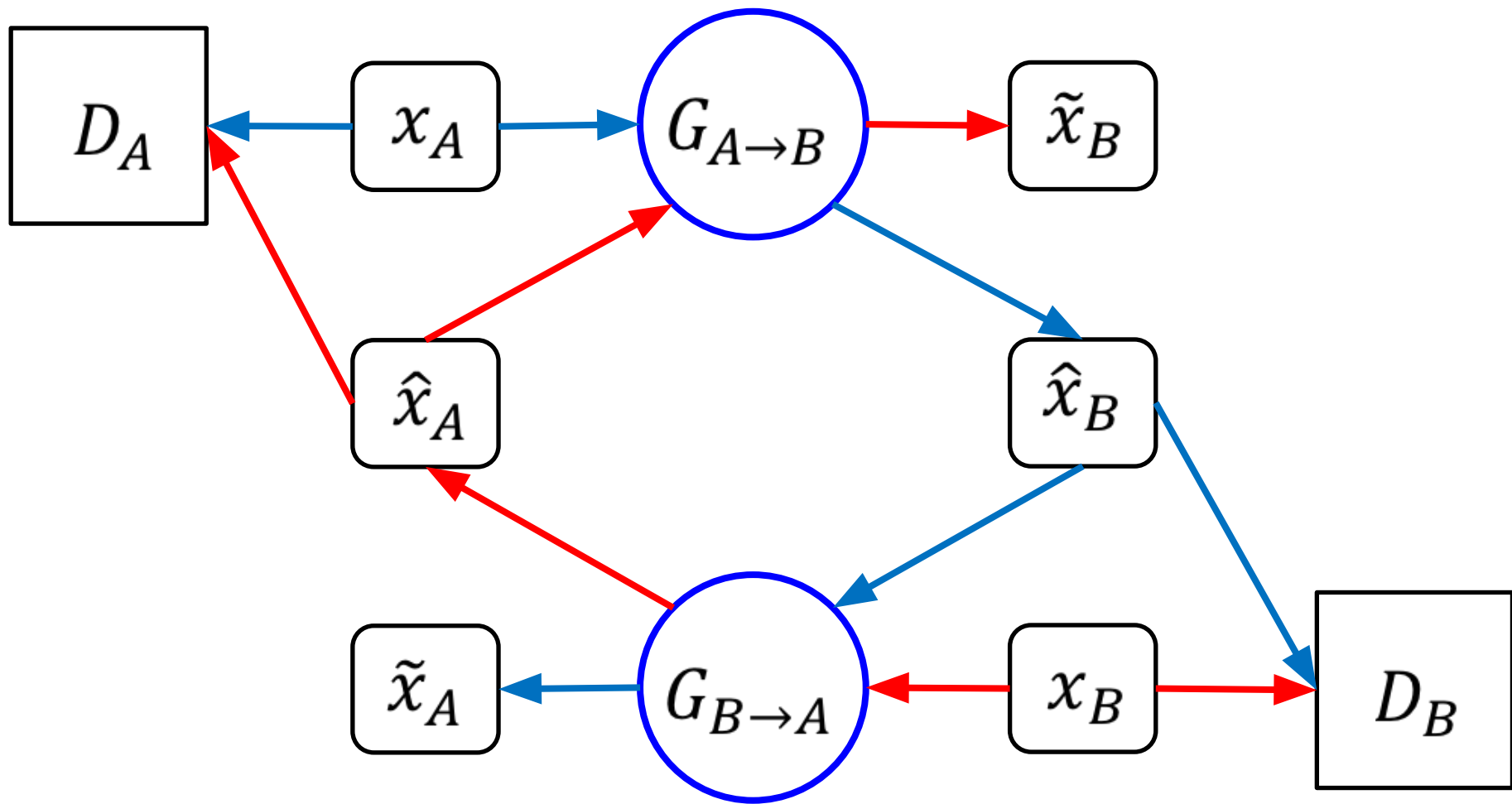
84 pitches

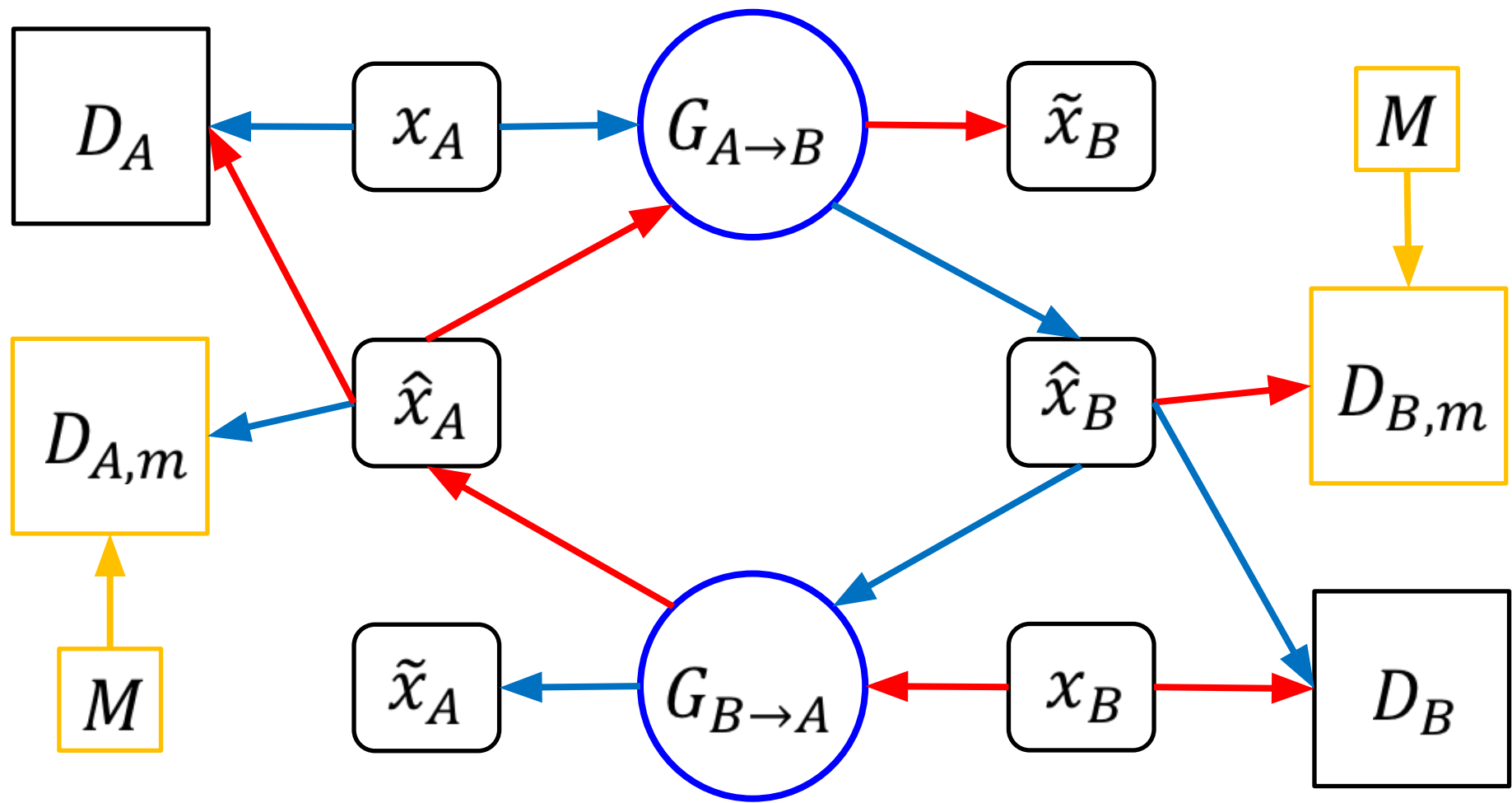


64 beats = 4 bars = 1 phrase

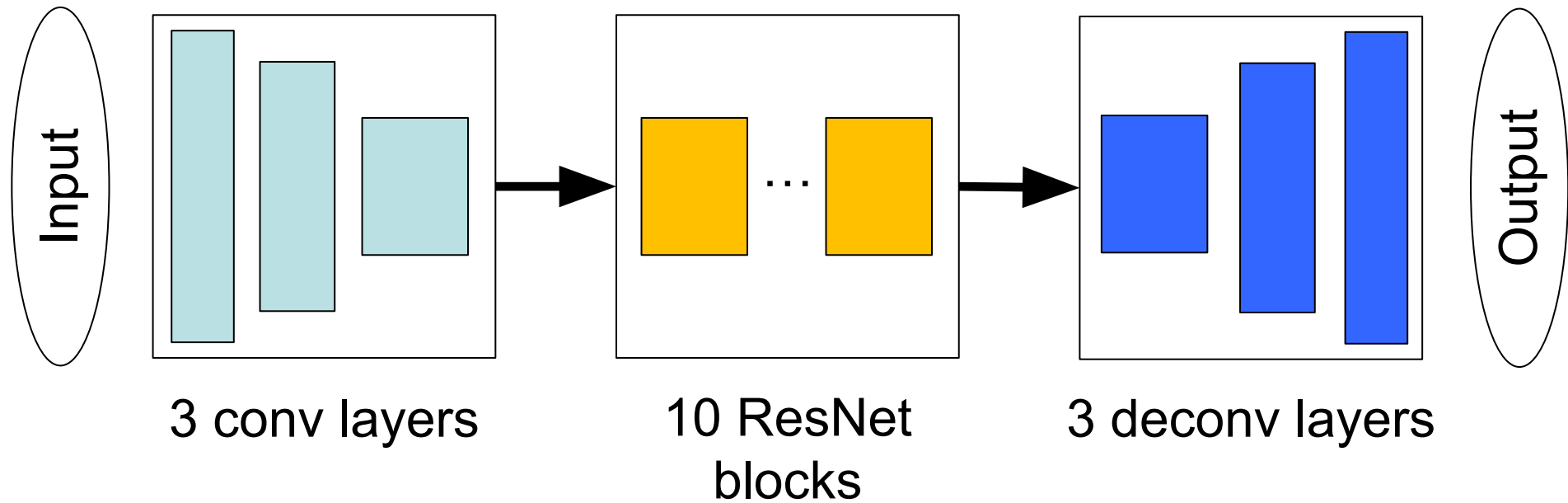


	Jazz	Classic	Pop
Songs	559	2714	1069
Phrases	<b>12341</b>	16545	20780

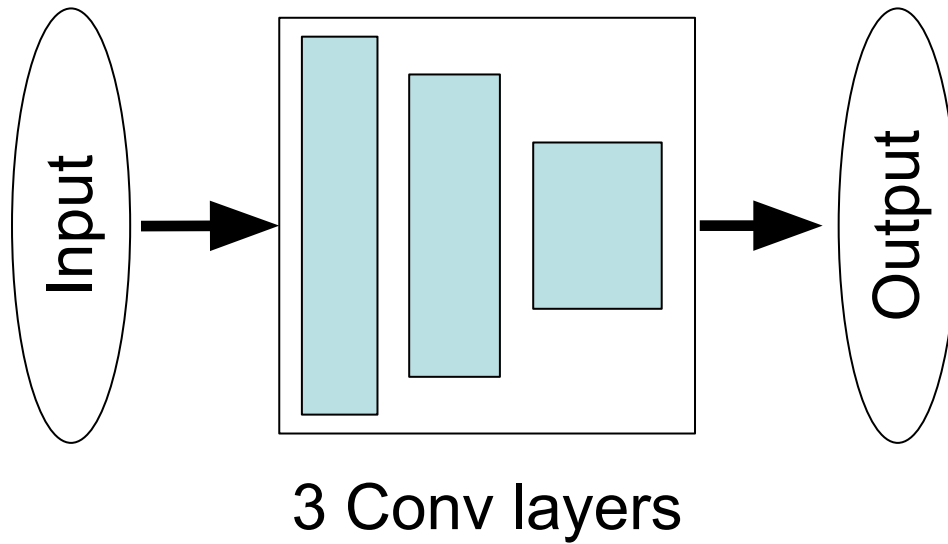




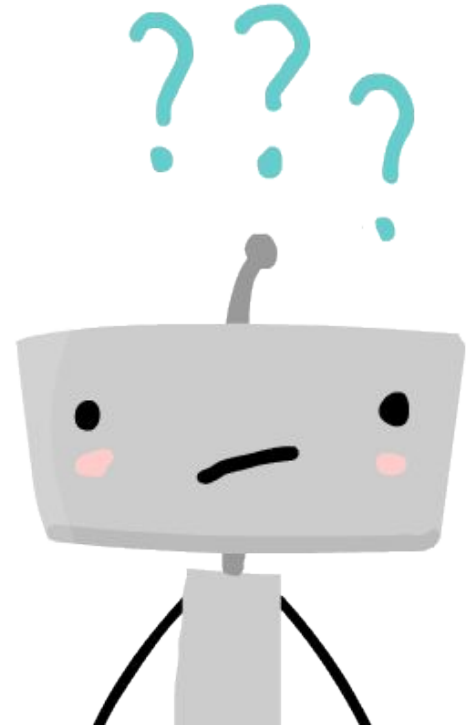
# Generators



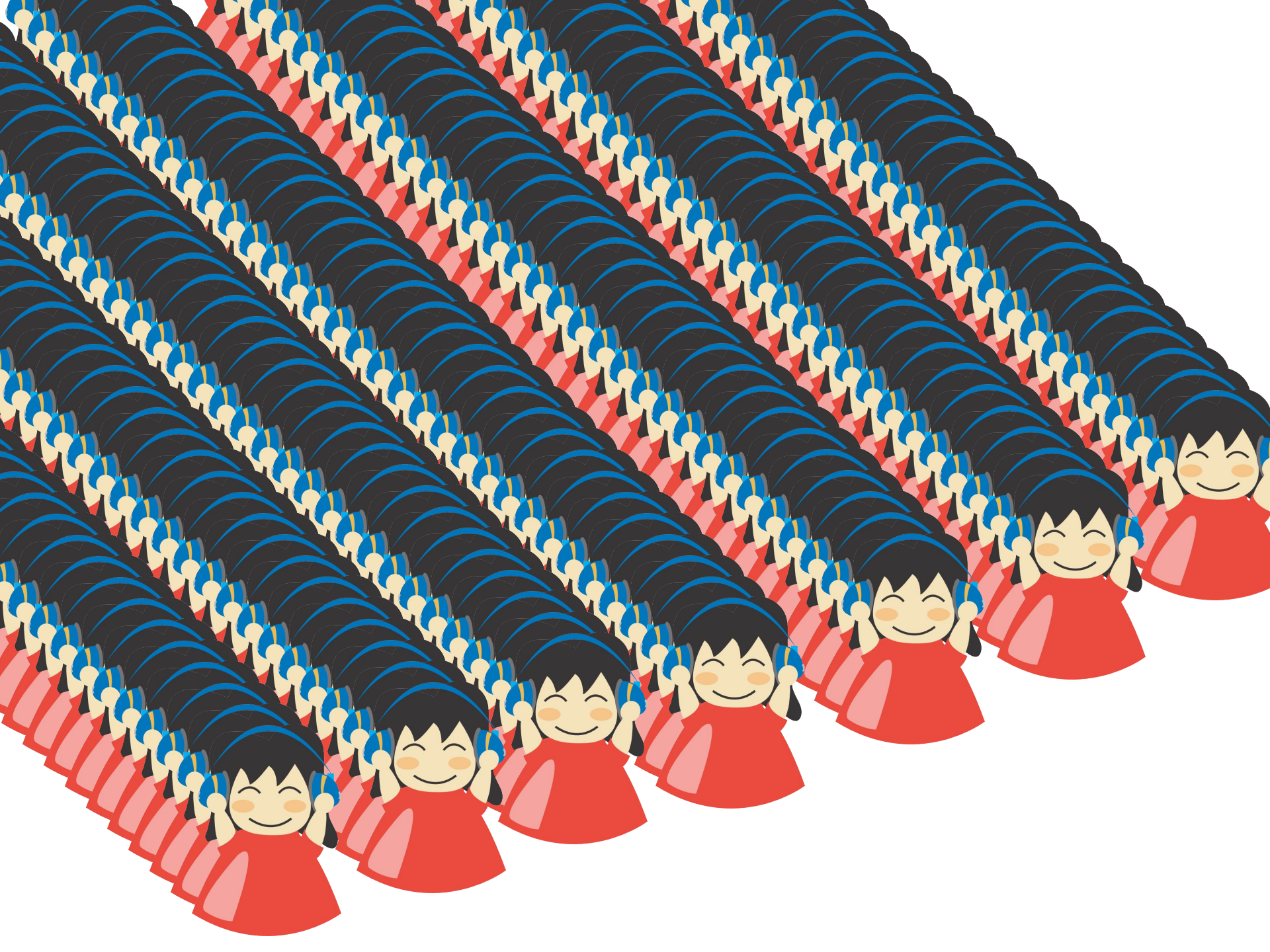
# Discriminators





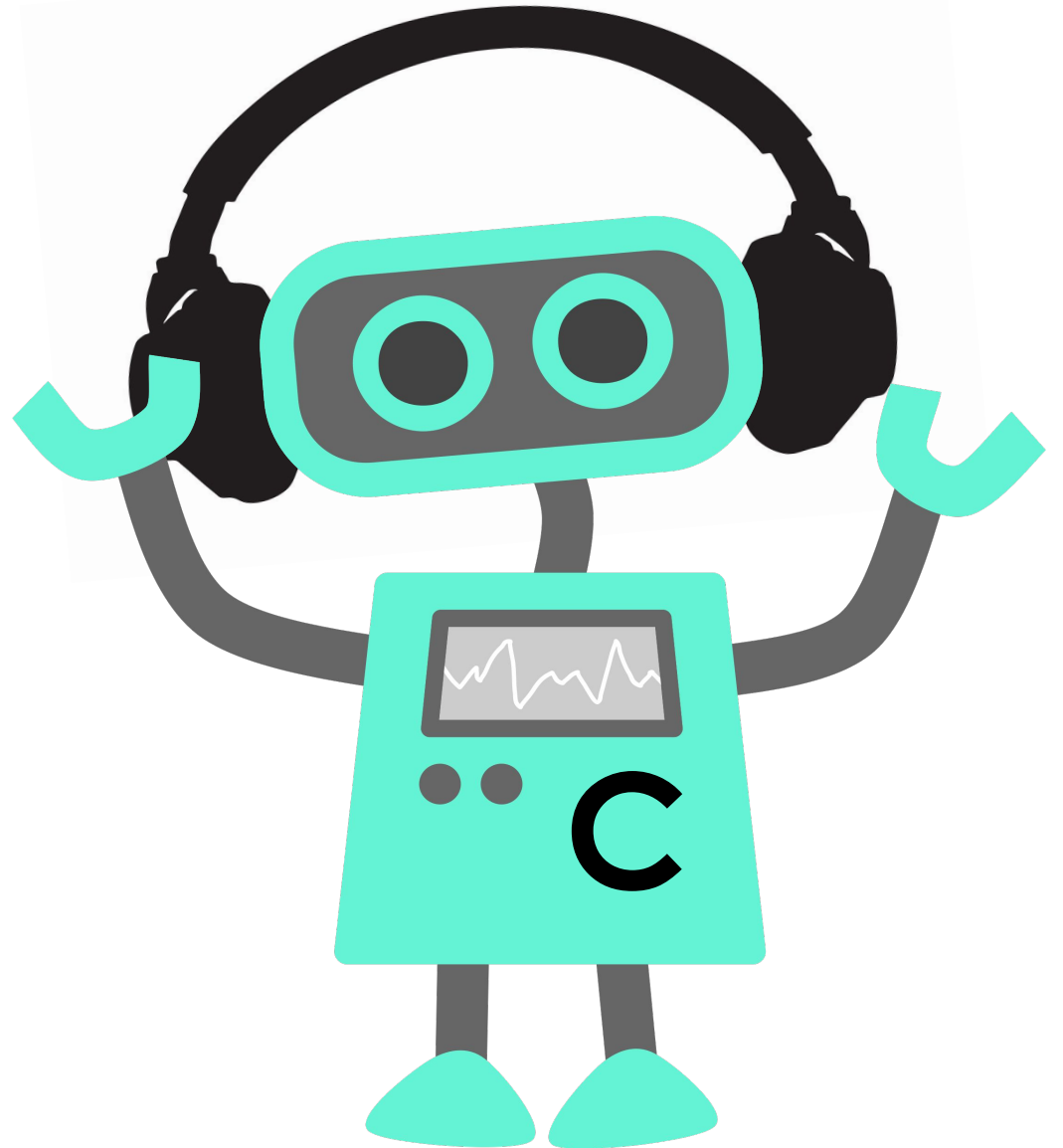


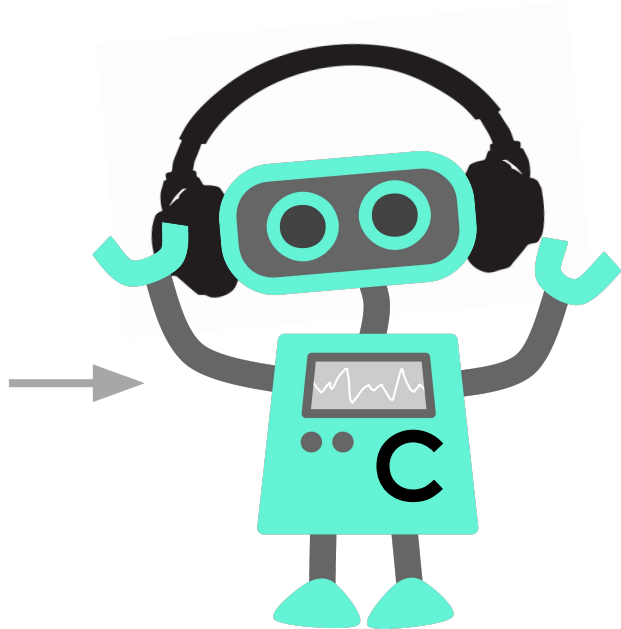
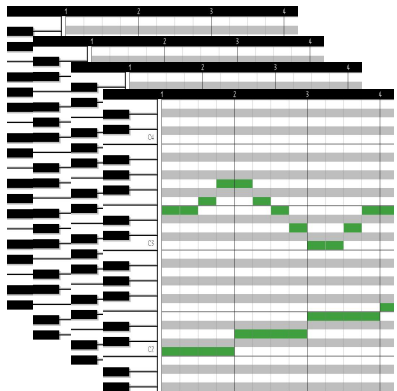




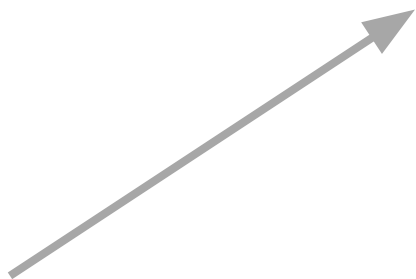
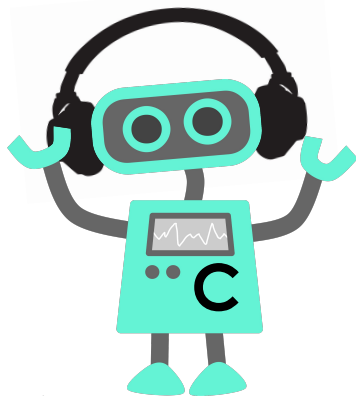
# Genre Classifier

*Let me do it!*





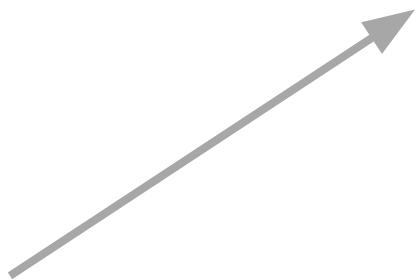
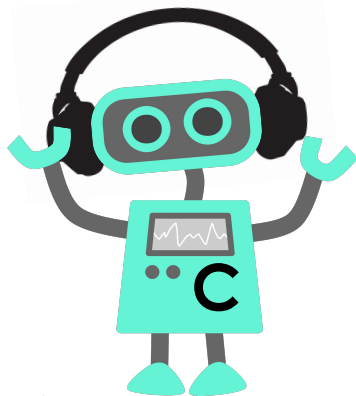
90% Jazz!



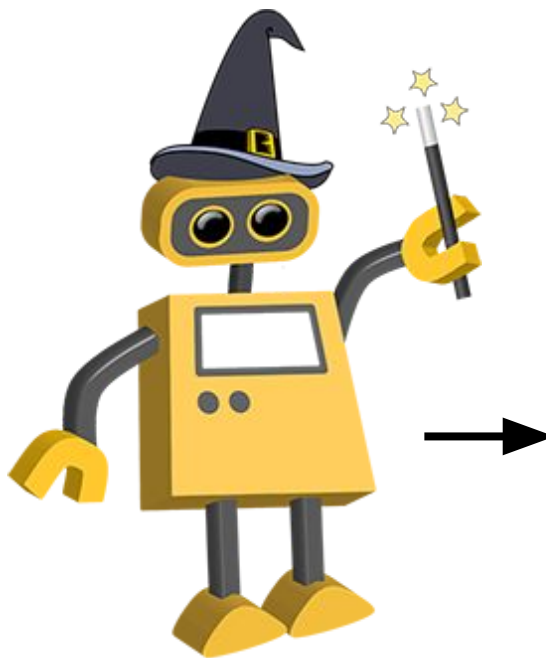
Before



90% Jazz!



Before

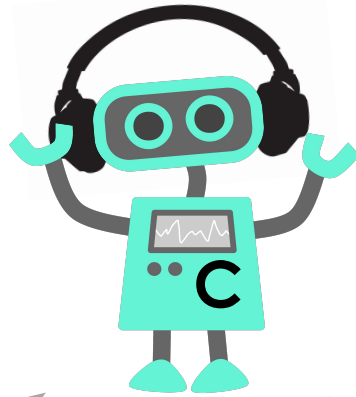


After



90% Jazz!

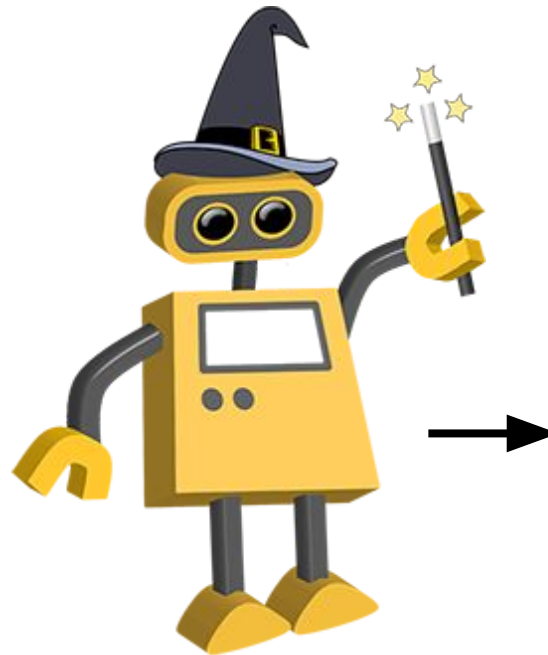
80% Classic!

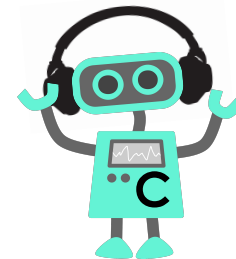


Before



After

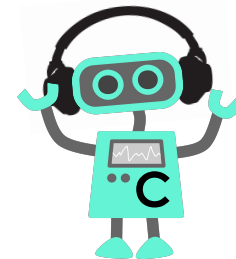




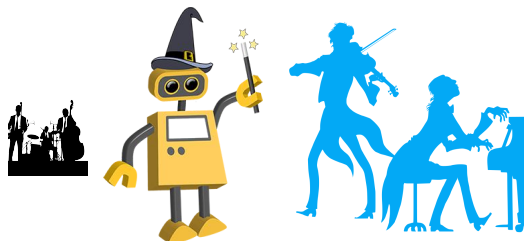
88%



80%



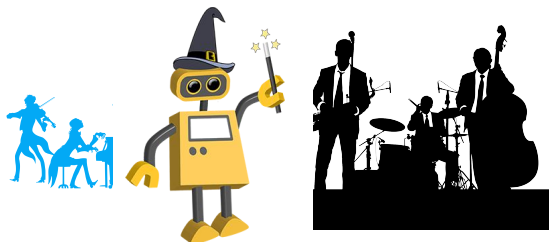
88%



80%

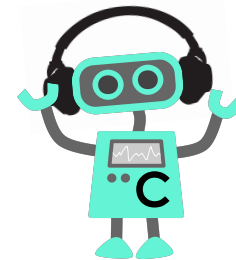


93%

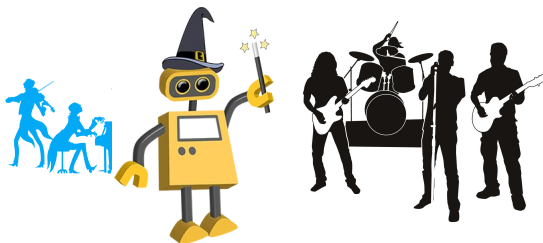


80%





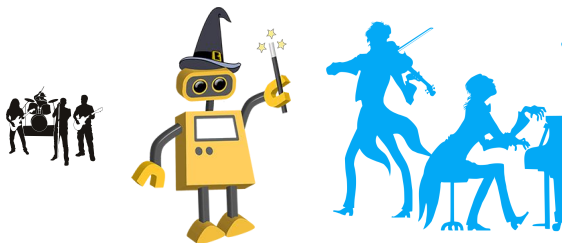
87%



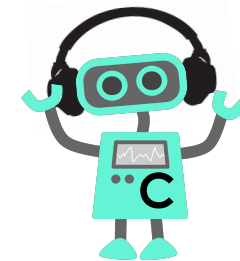
73%



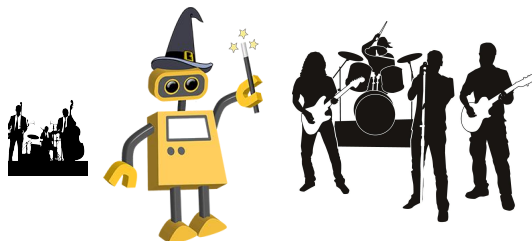
80%



76%



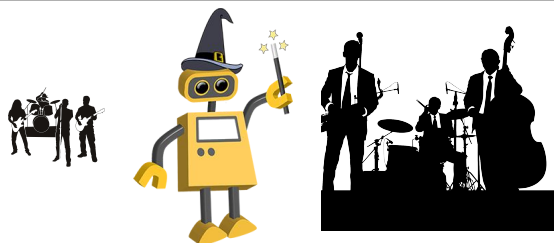
61%



76%



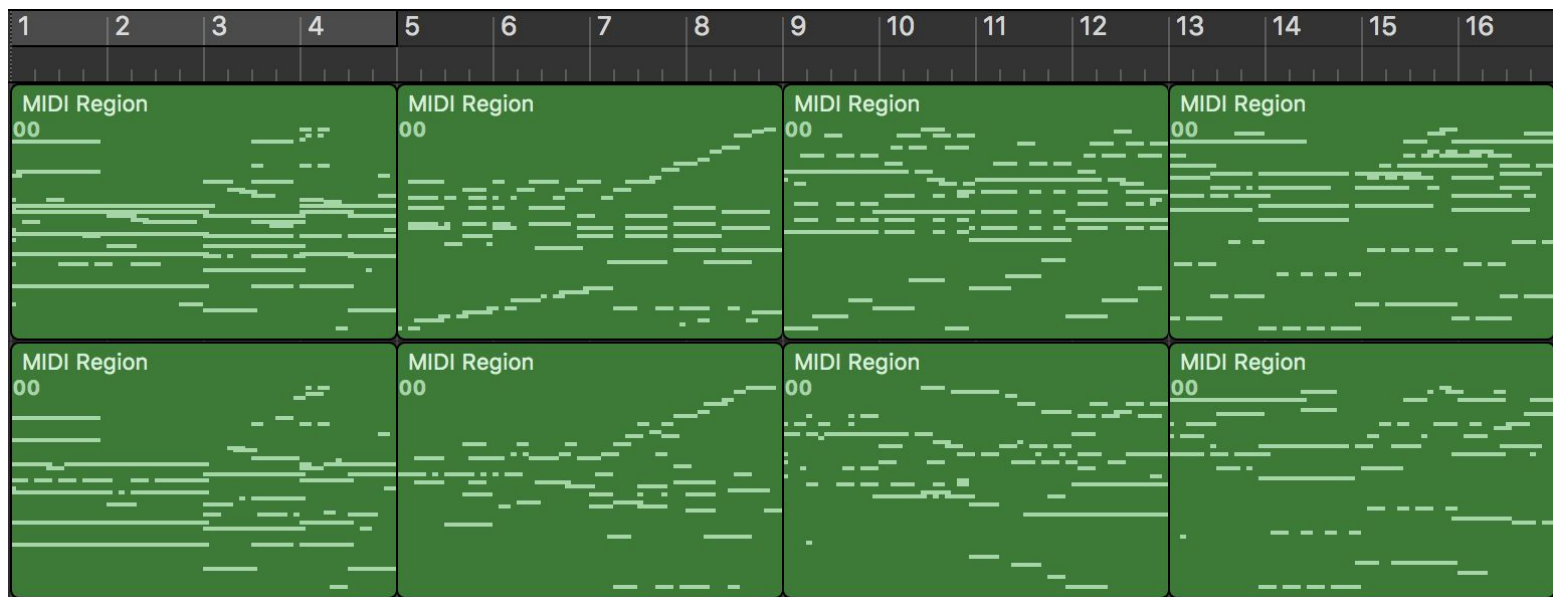
74%



51%

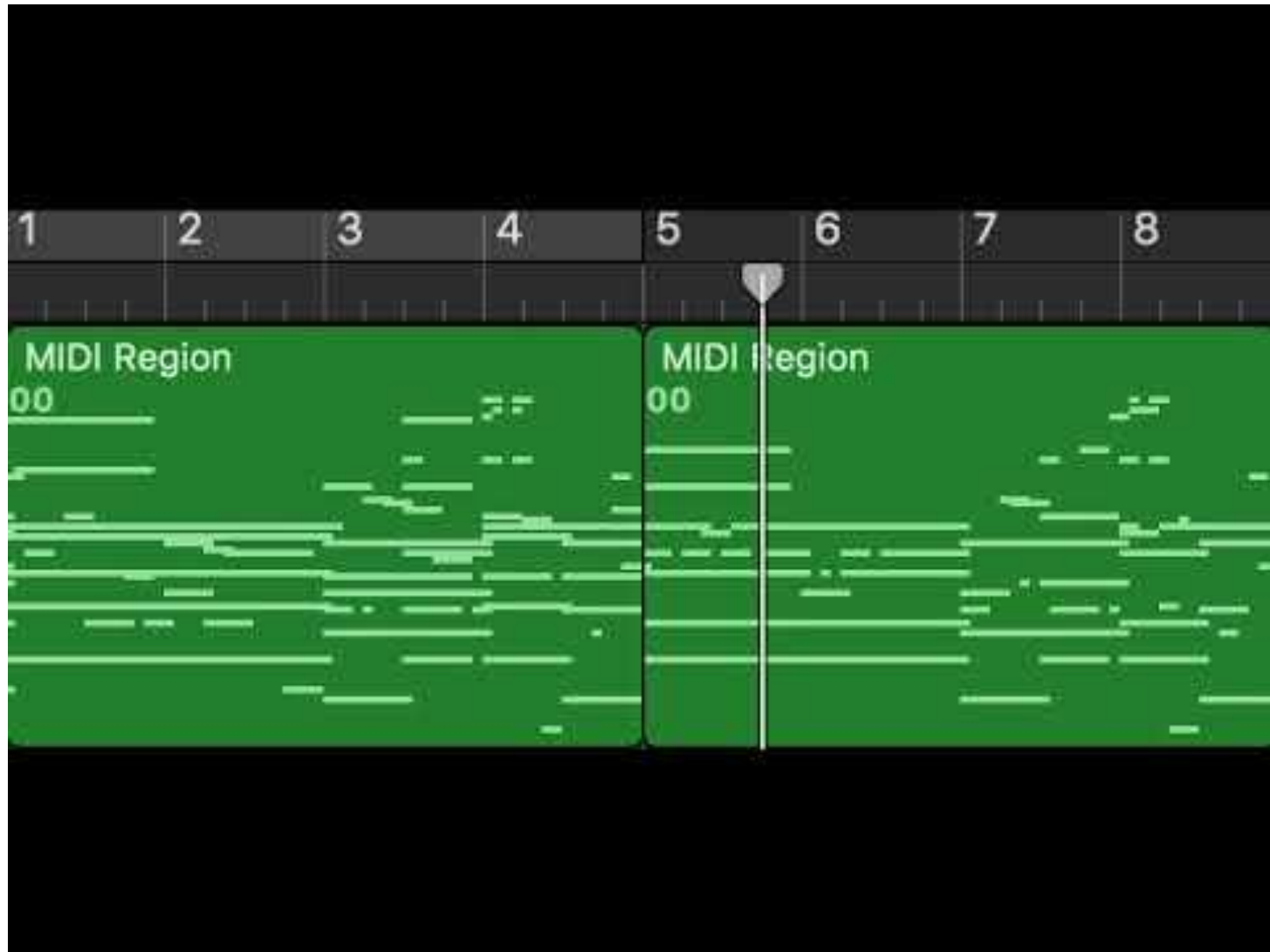
Original  
Jazz

Transfer  
Classic



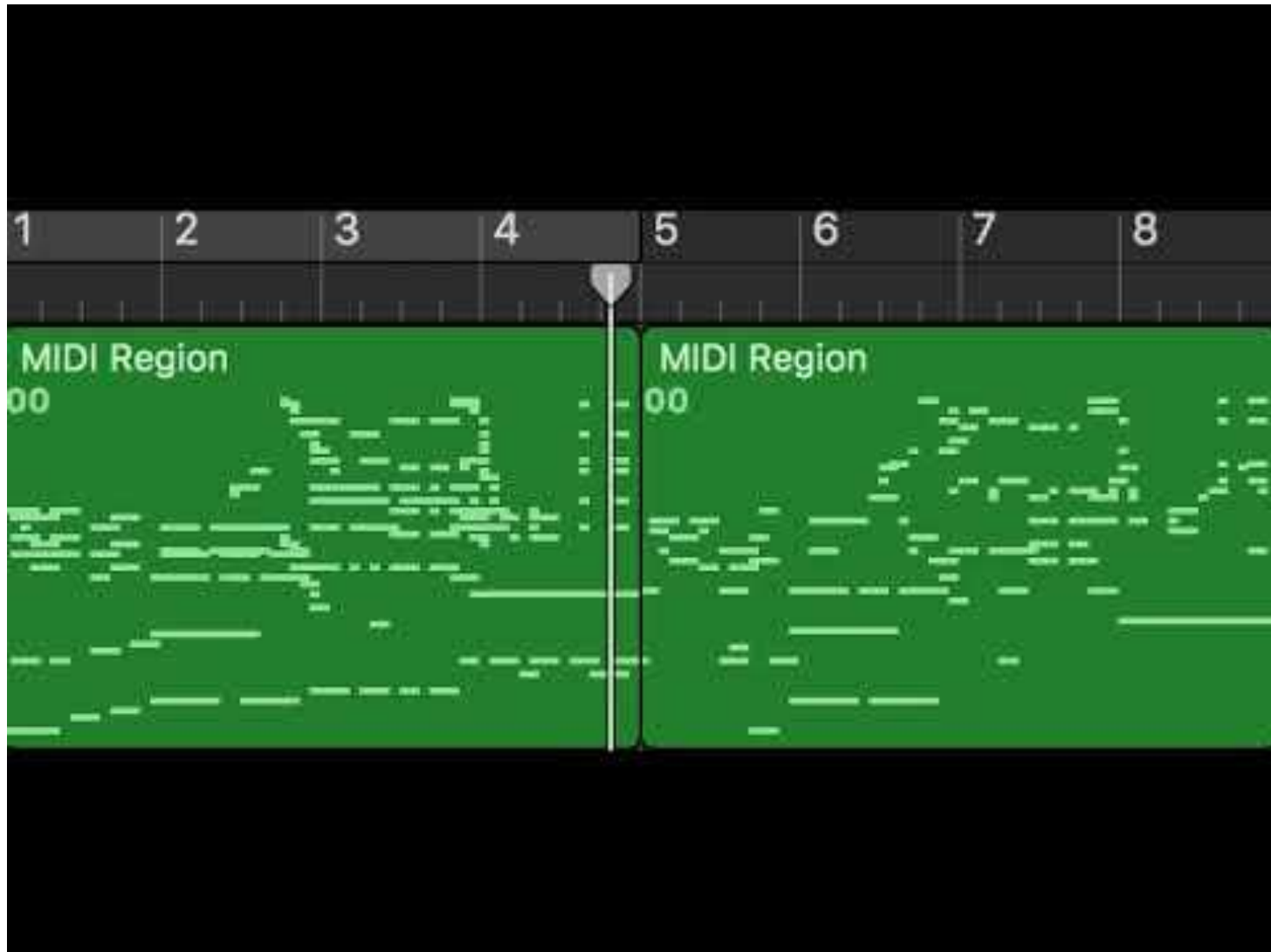
Jazz

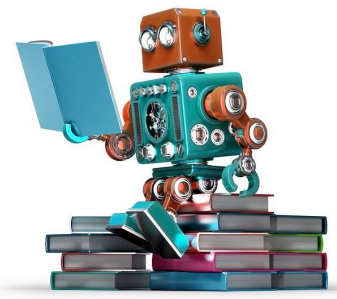
Classic



Jazz

Classic





More details?

<https://arxiv.org/abs/1809.07575>

More Samples?



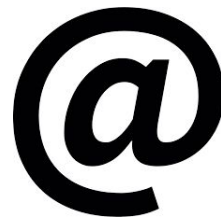
[https://www.youtube.com/channel/UCs-bl\\_NP7PrQaMV1AJ4A3HQ](https://www.youtube.com/channel/UCs-bl_NP7PrQaMV1AJ4A3HQ)

Code?



<https://github.com/sumuzhao/CycleGAN-Music-Style-Transfer>

Questions?



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