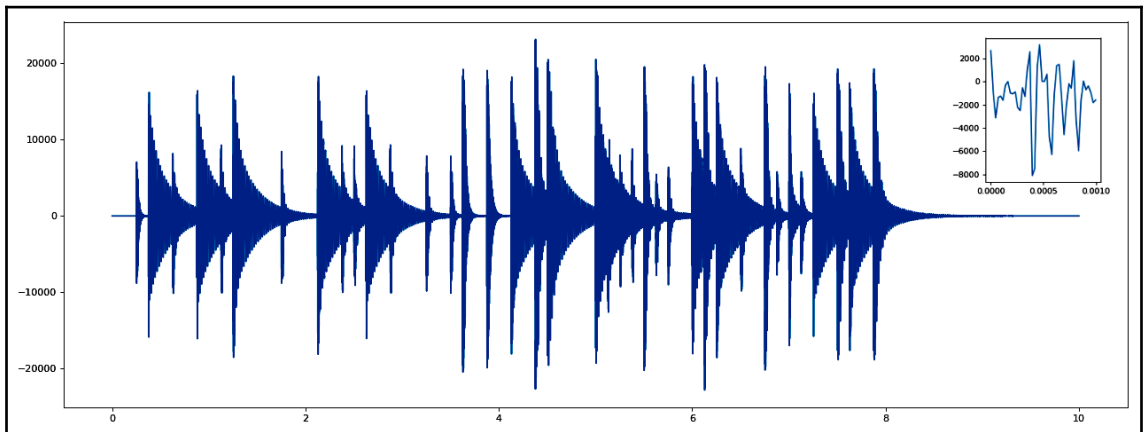
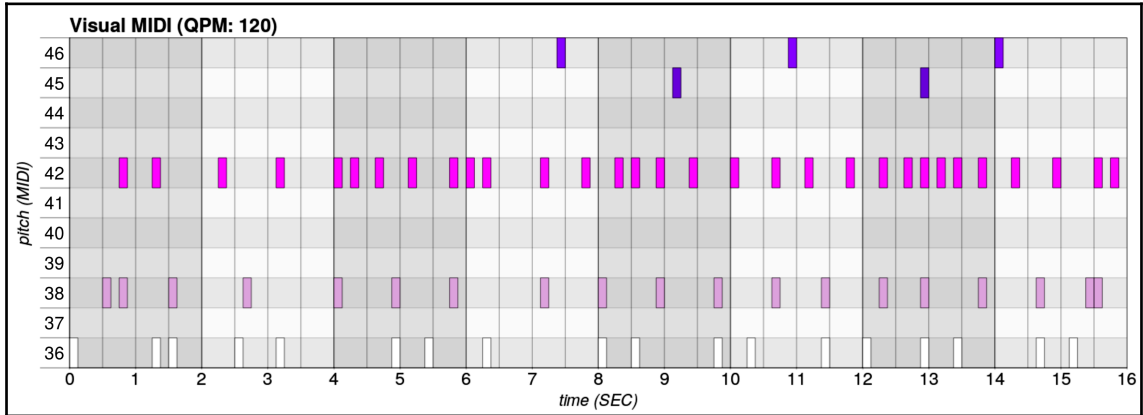
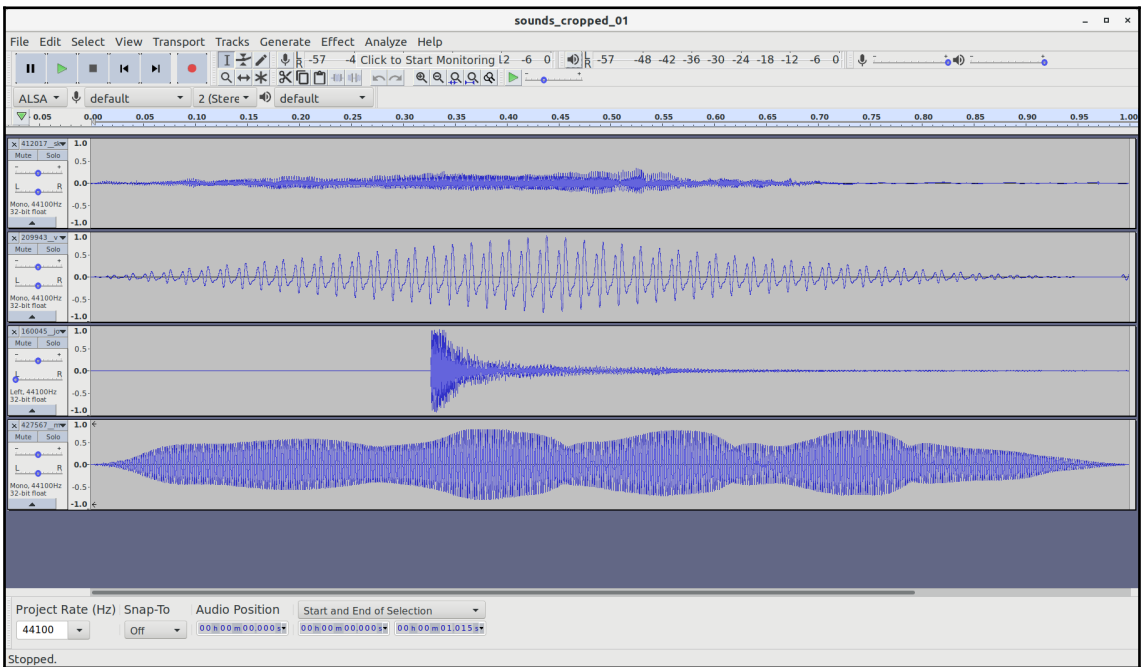
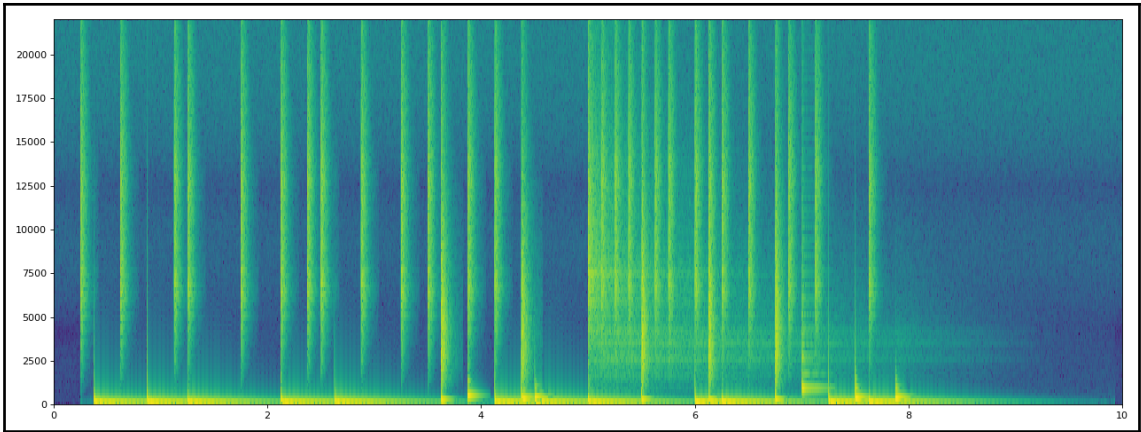


# Chapter 1: Introduction to Magenta and Generative Art





MuseScore 2: Symphony No. 5 in C Minor\*

File Edit View Add Notes Layout Style Plugins Help

100% Page View

Concert Pitch

Game\_of\_Thrones\_Melody\_Monophonic X | Beethoven\_Symphony\_No\_5\_1st\_movement\_Piano\_solo\* X

## Symphony No. 5 in C Minor

### First Movement

Adp. from arrangement  
by Ernst Pauer (1826-1905)

Ludwig van Beethoven

**Allegro con brio**

*ff* *p*

$\text{♩} = 60$   $\text{♩} = 164$   $\text{♩} = 60$   $\text{♩} = 164$

Vertical Frame 1:31:000

notebook

localhost:8888/notebooks/Chapter01/notebook.ipynb 120%

Jupyter notebook (unsaved changes) Logout

File Edit View Insert Cell Kernel Widgets Help Not Trusted Python 3

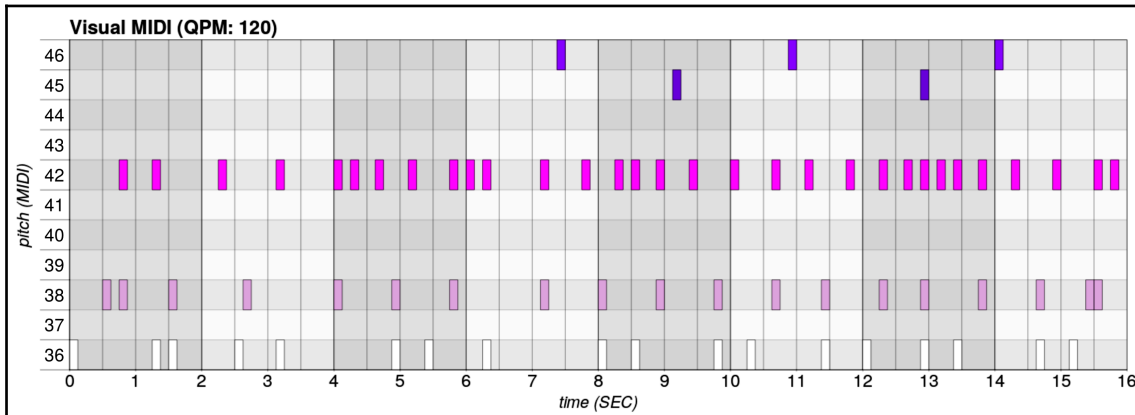
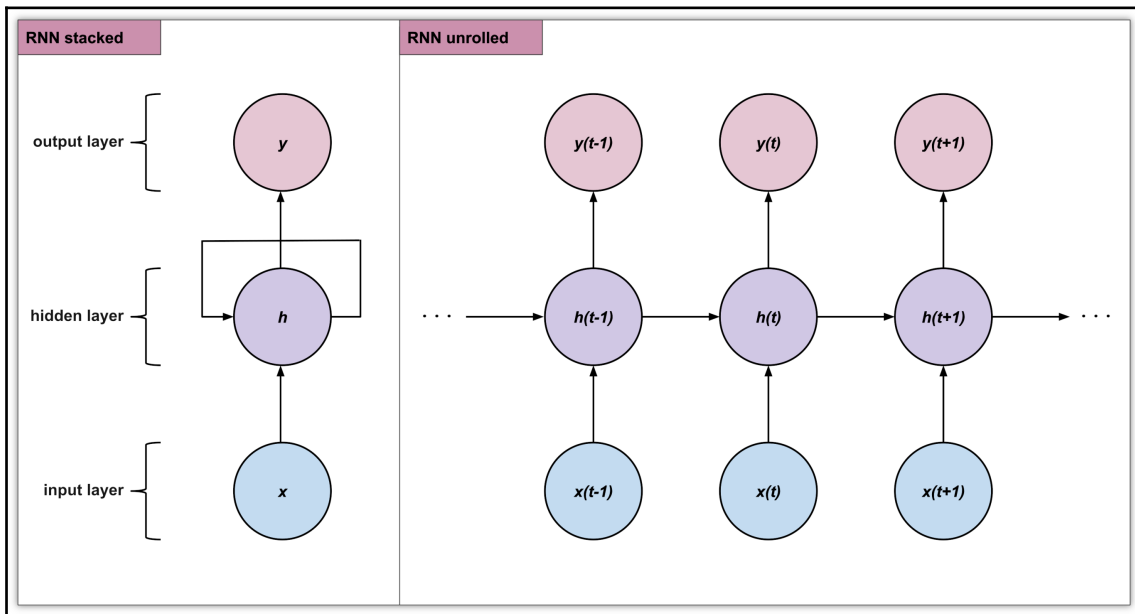
```
In [1]: import tensorflow
import magenta

print("Installed tensorflow version " + tensorflow.__version__)
print("Installed magenta version " + magenta.__version__)
```

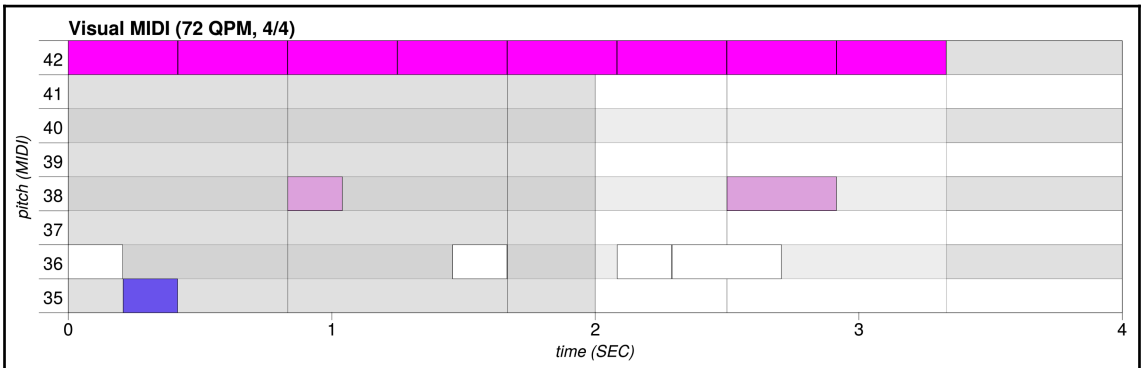
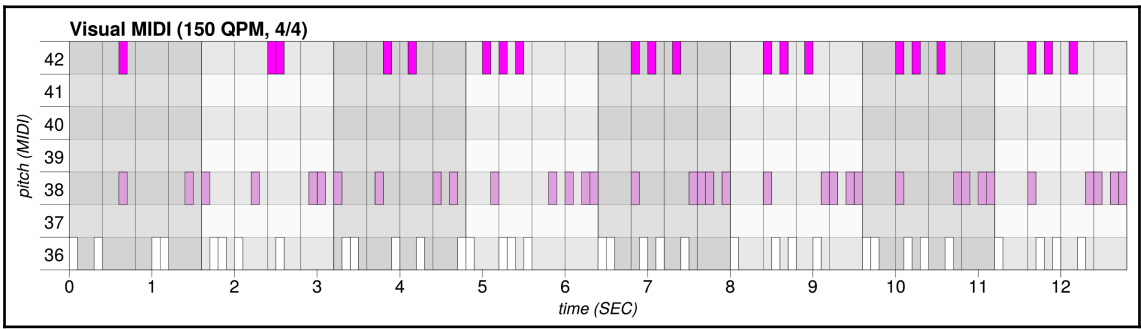
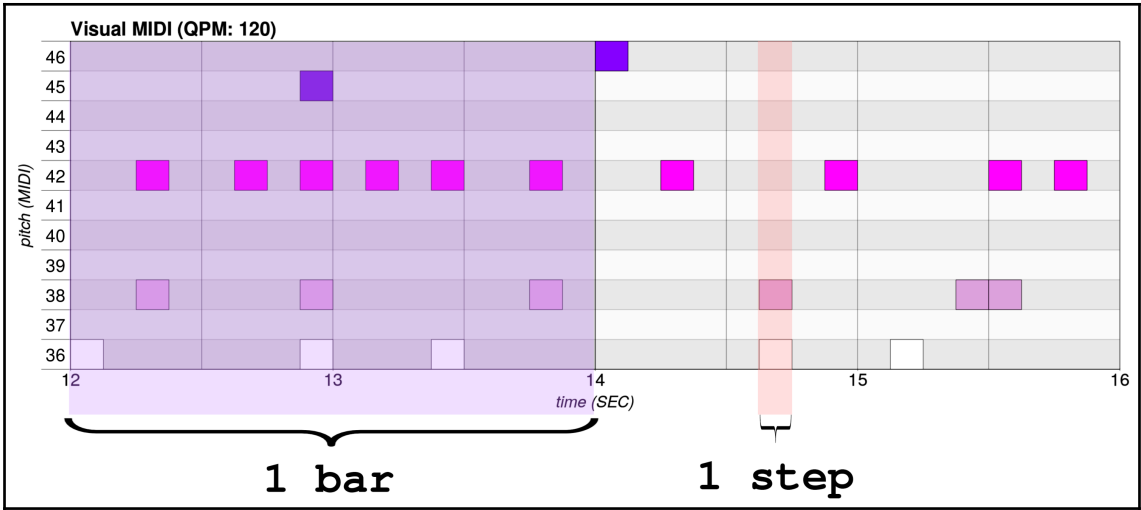
WARNING: Logging before flag parsing goes to stderr.  
W0805 19:14:28.667469 3080 deprecation\_wrapper.py:119] From c:\users\claire\miniconda3\envs\magenta\lib\site-package s\magenta\pipelines\statistics.py:132: The name tf.logging.info is deprecated. Please use tf.compat.v1.logging.info i nstead.  
W0805 19:14:30.773469 3080 deprecation\_wrapper.py:119] From c:\users\claire\miniconda3\envs\magenta\lib\site-package s\magenta\music\note\_sequence\_io.py:60: The name tf.python\_io.TFRecordWriter is deprecated. Please use tf.io.TFRecord Writer instead.

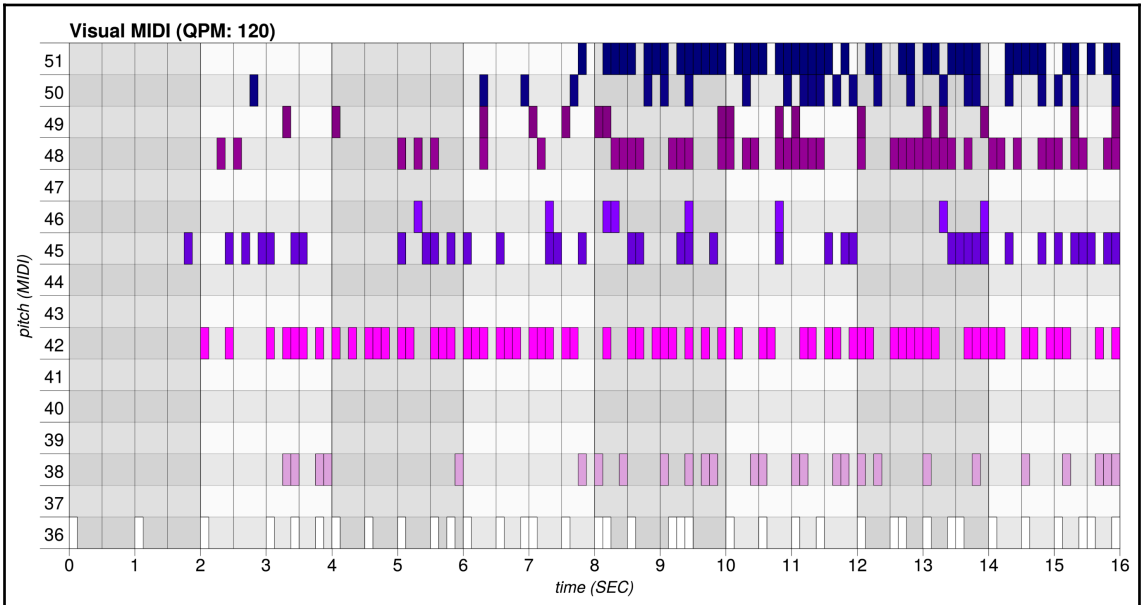
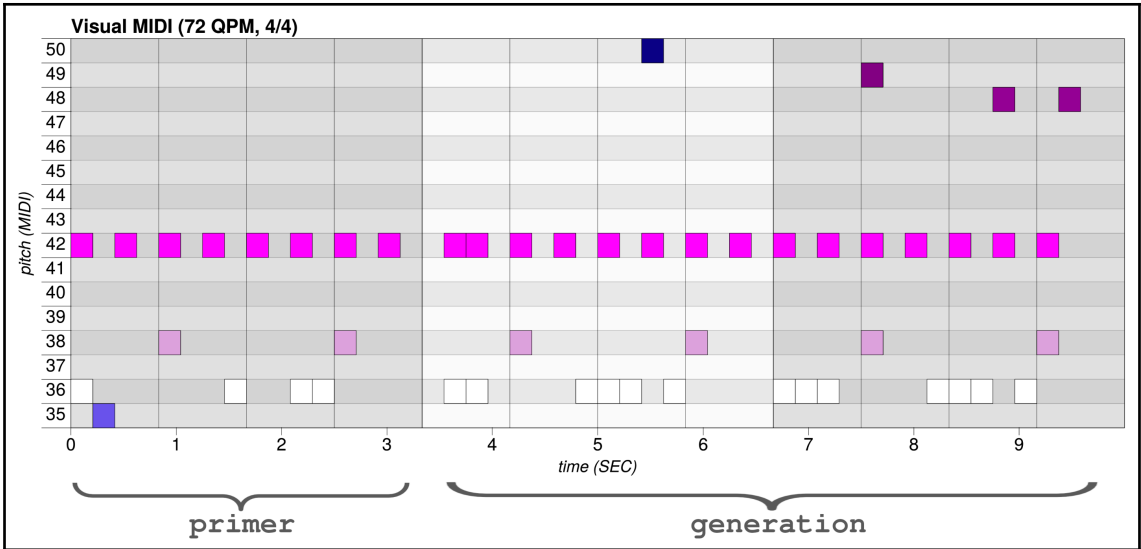
Installed tensorflow version 1.14.0  
Installed magenta version 1.1.2

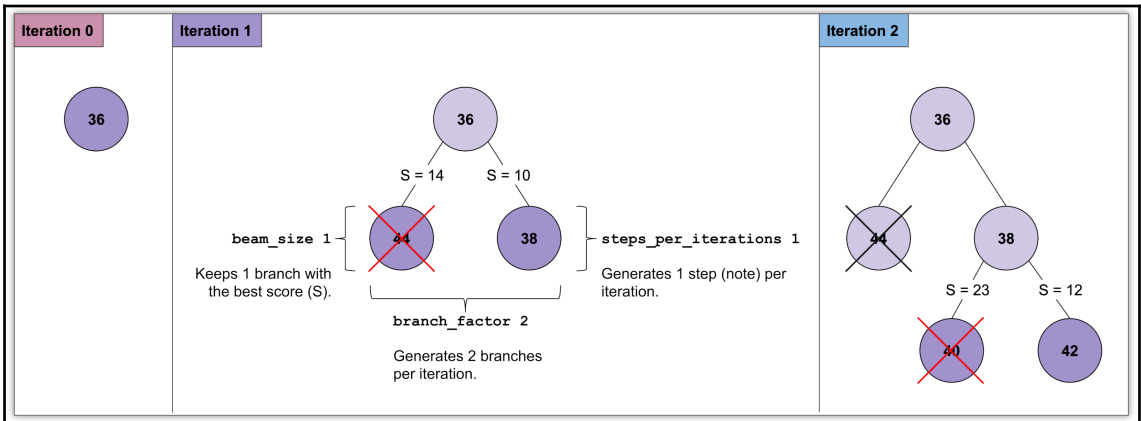
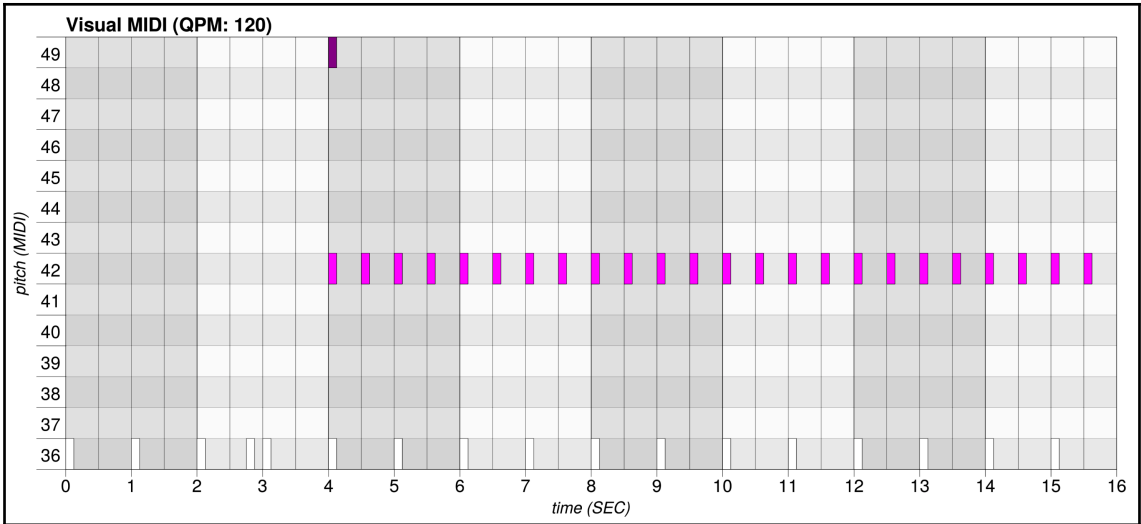
# Chapter 2: Generating Drum Sequences with the Drums RNN

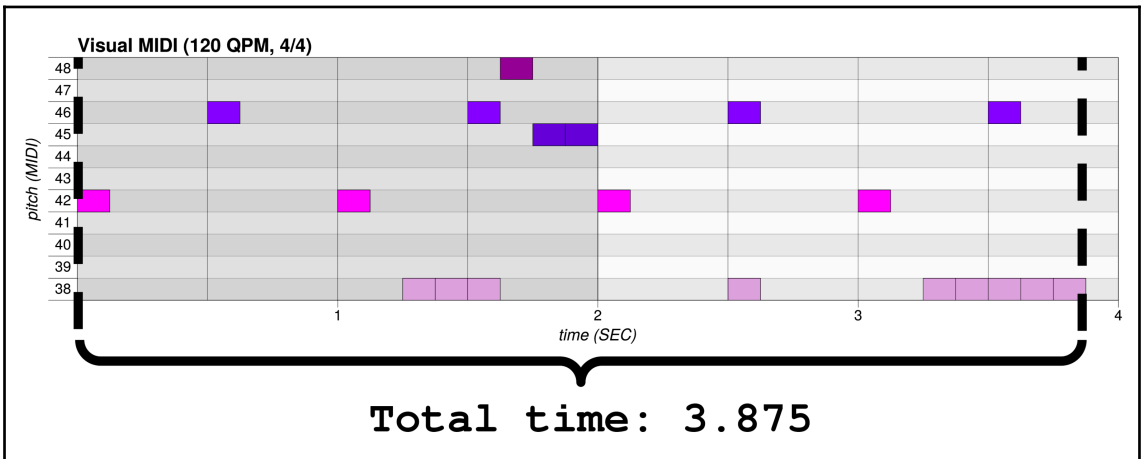
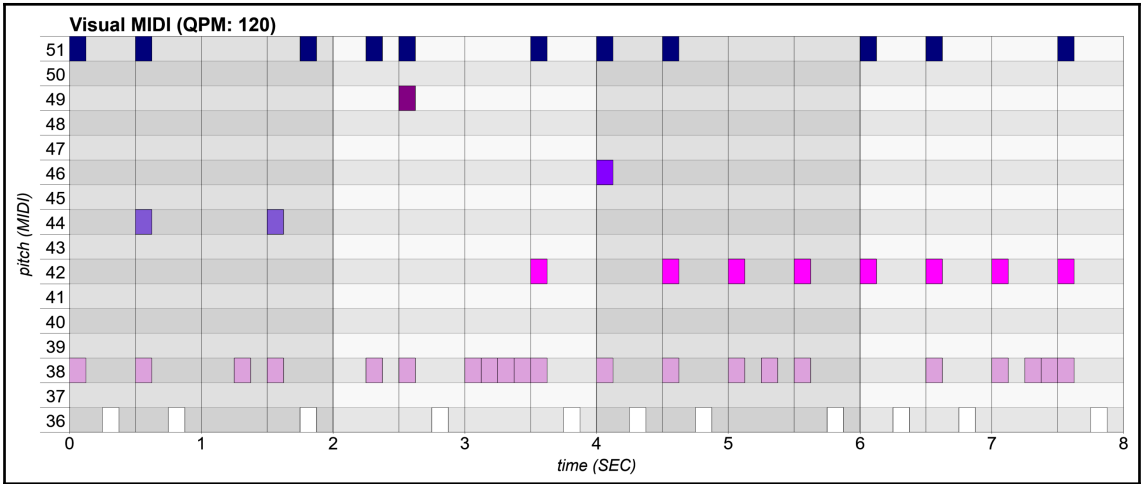


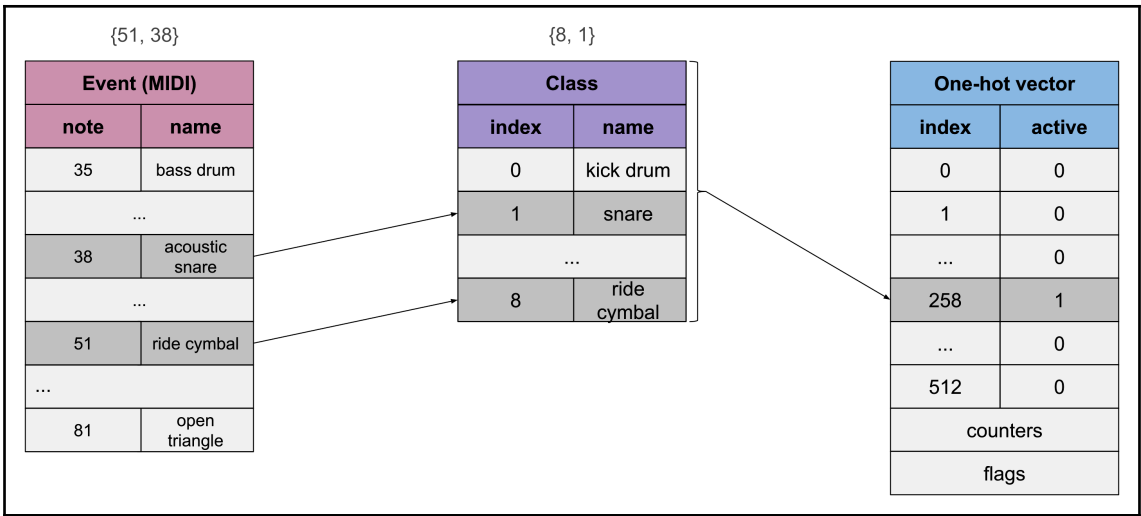




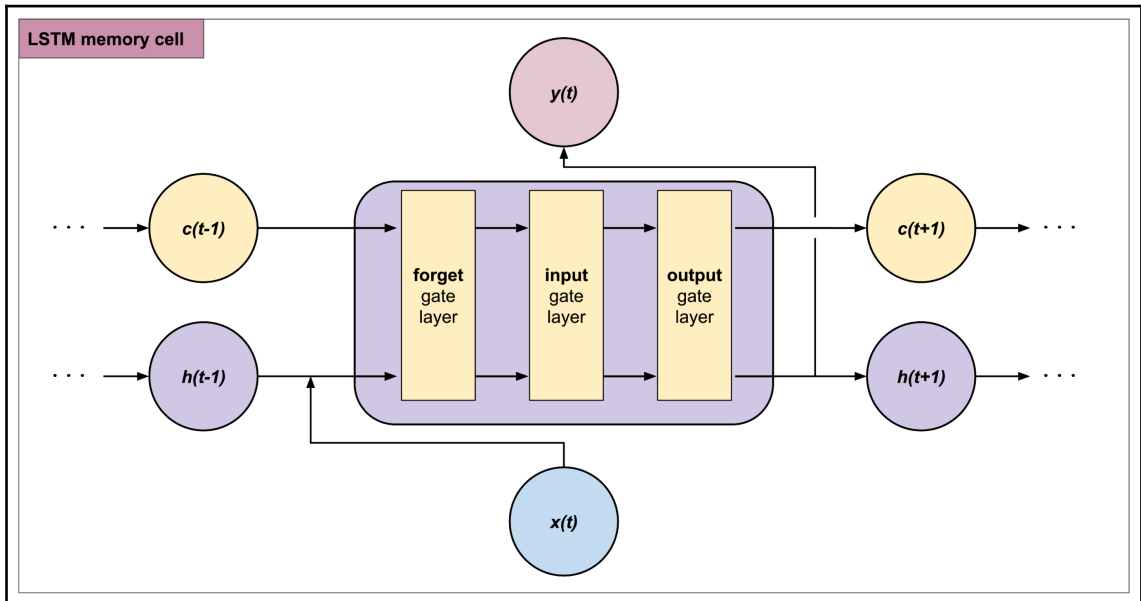
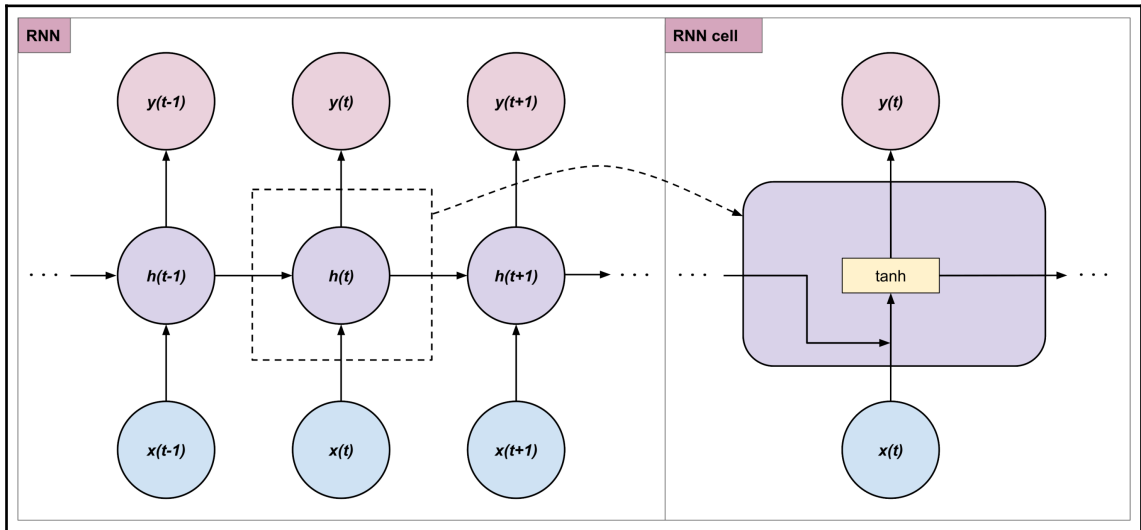






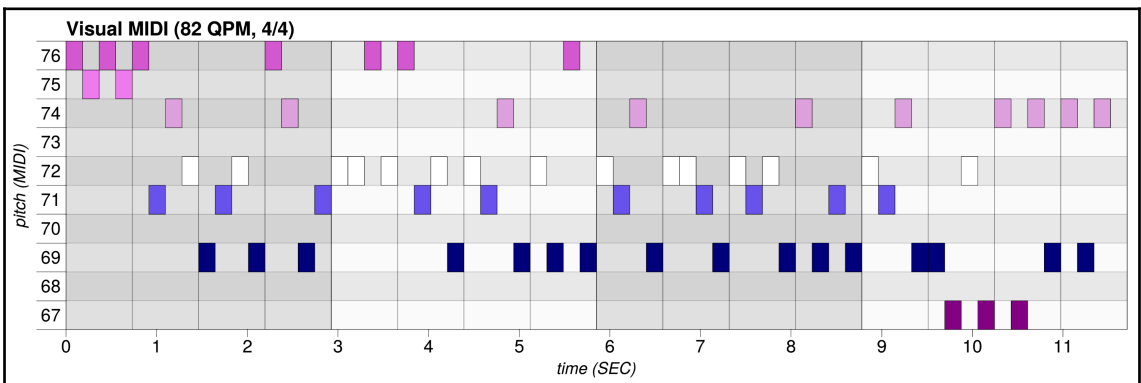
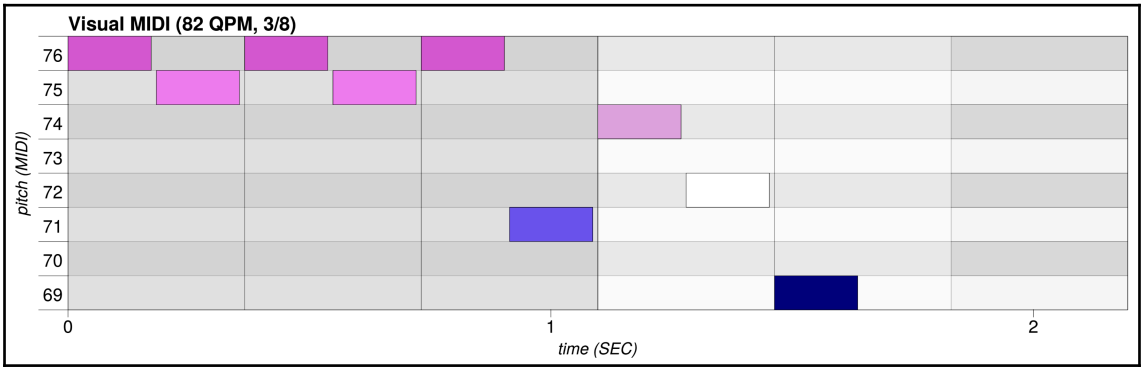


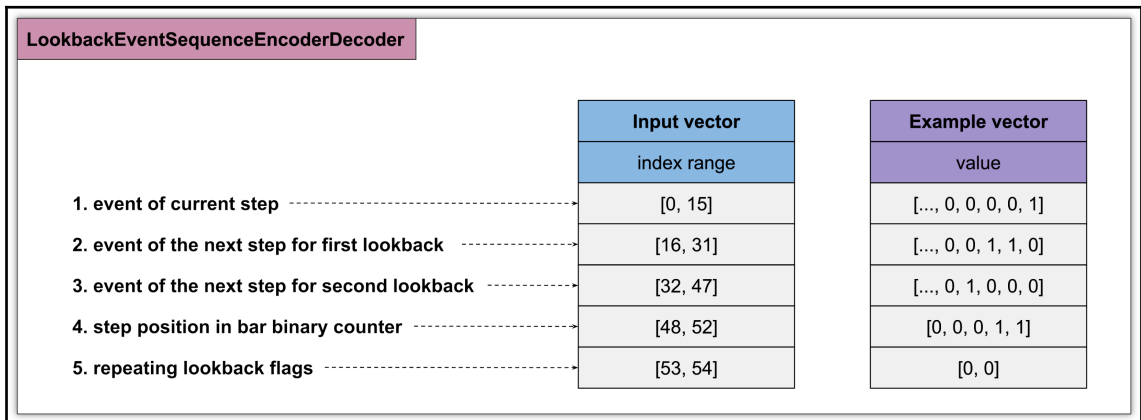
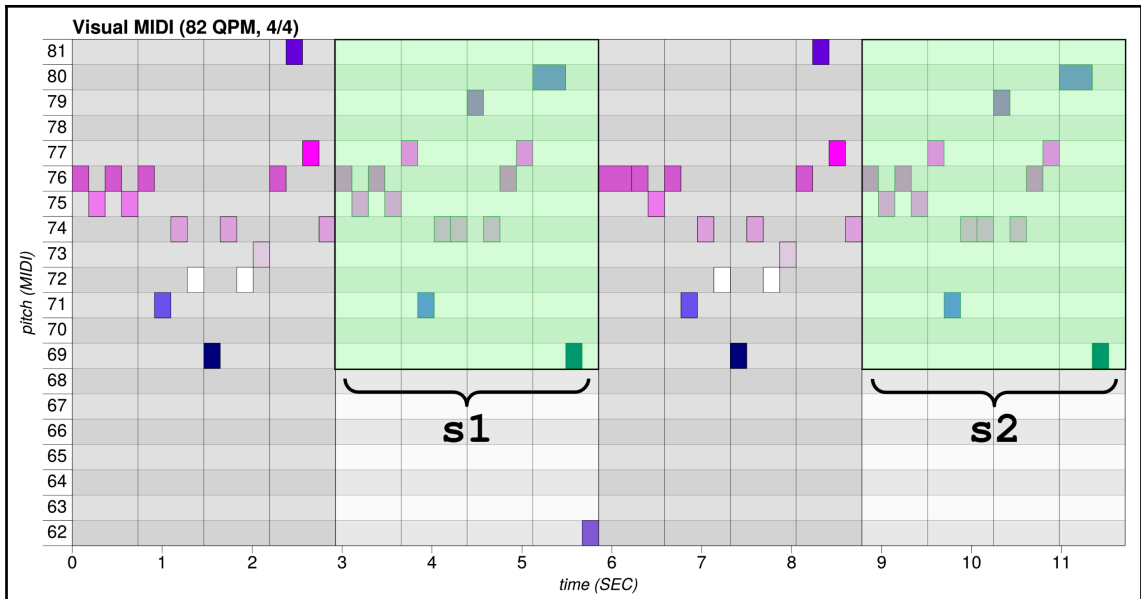
# Chapter 3: Generating Polyphonic Melodies



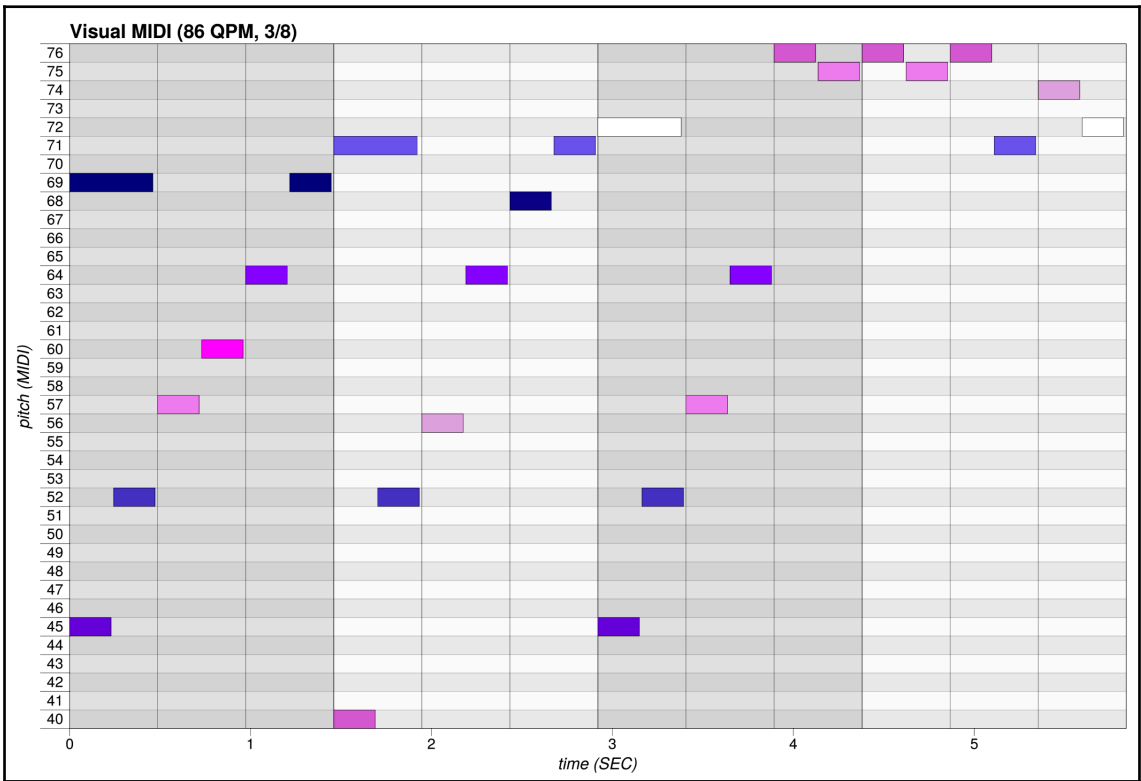
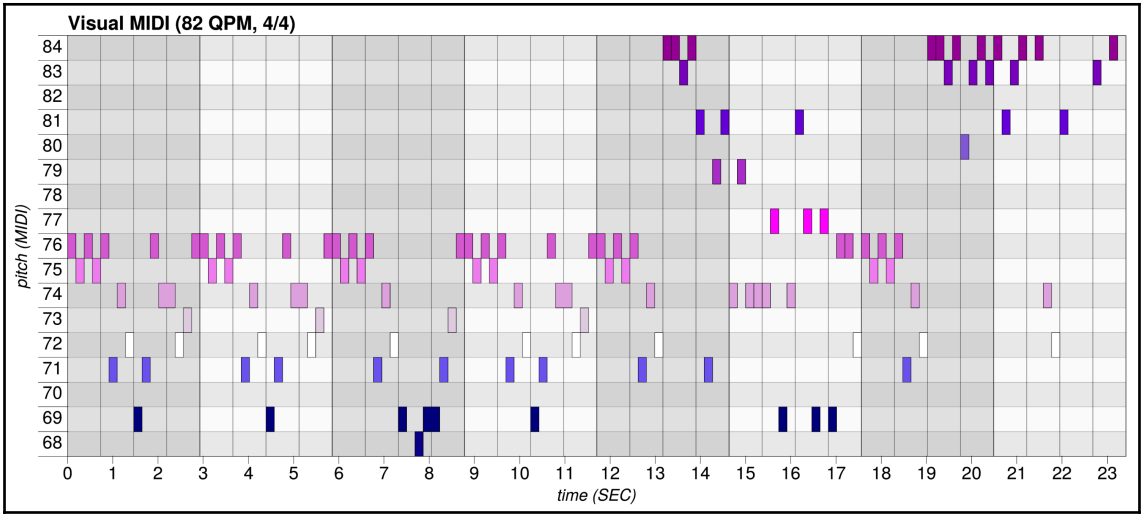
#37  
Piano

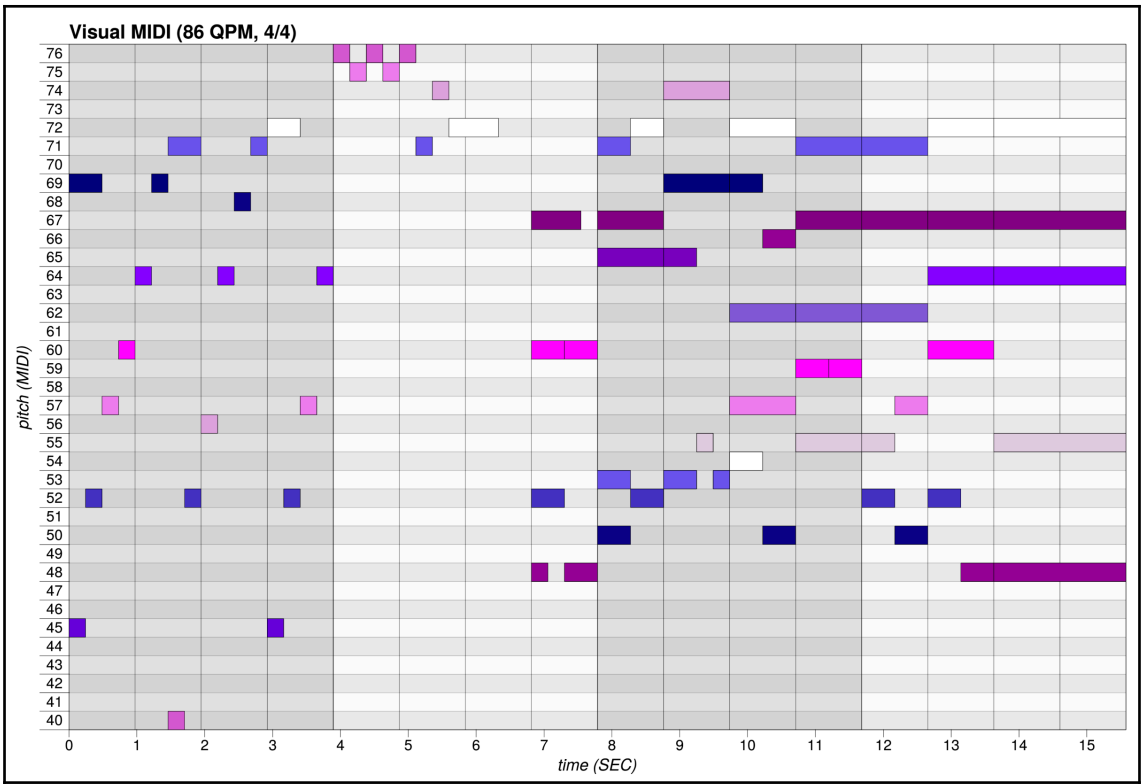
#25  
Piano

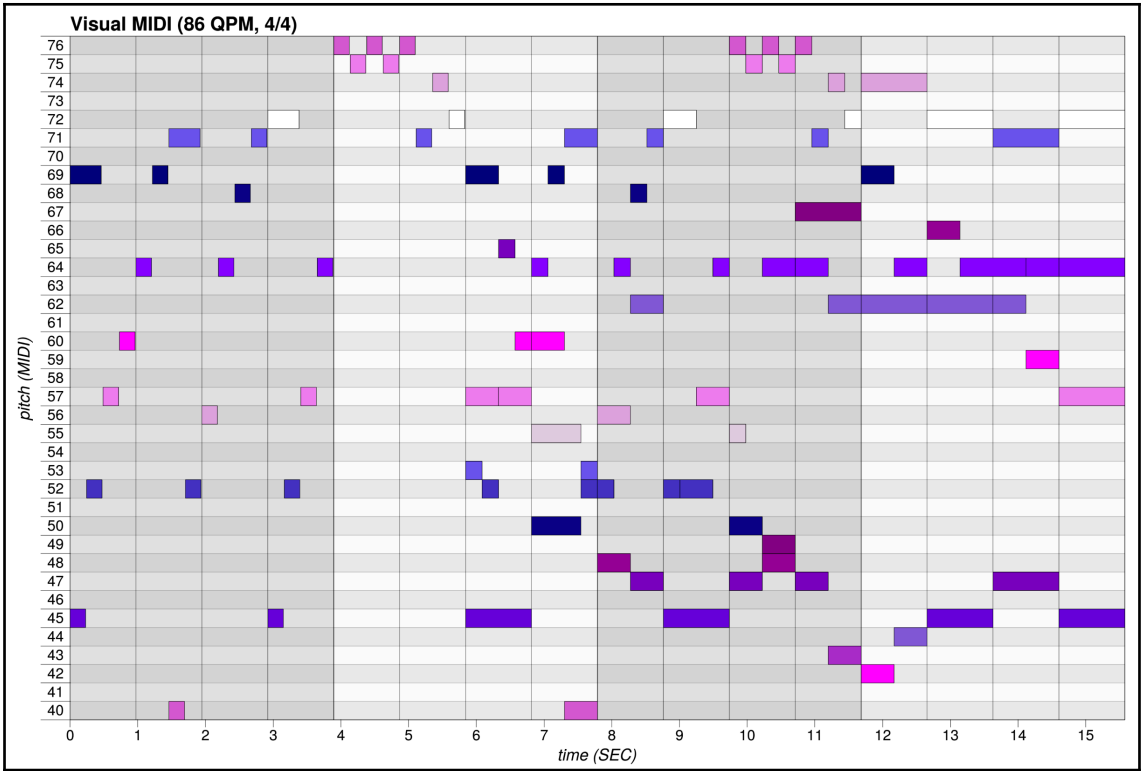


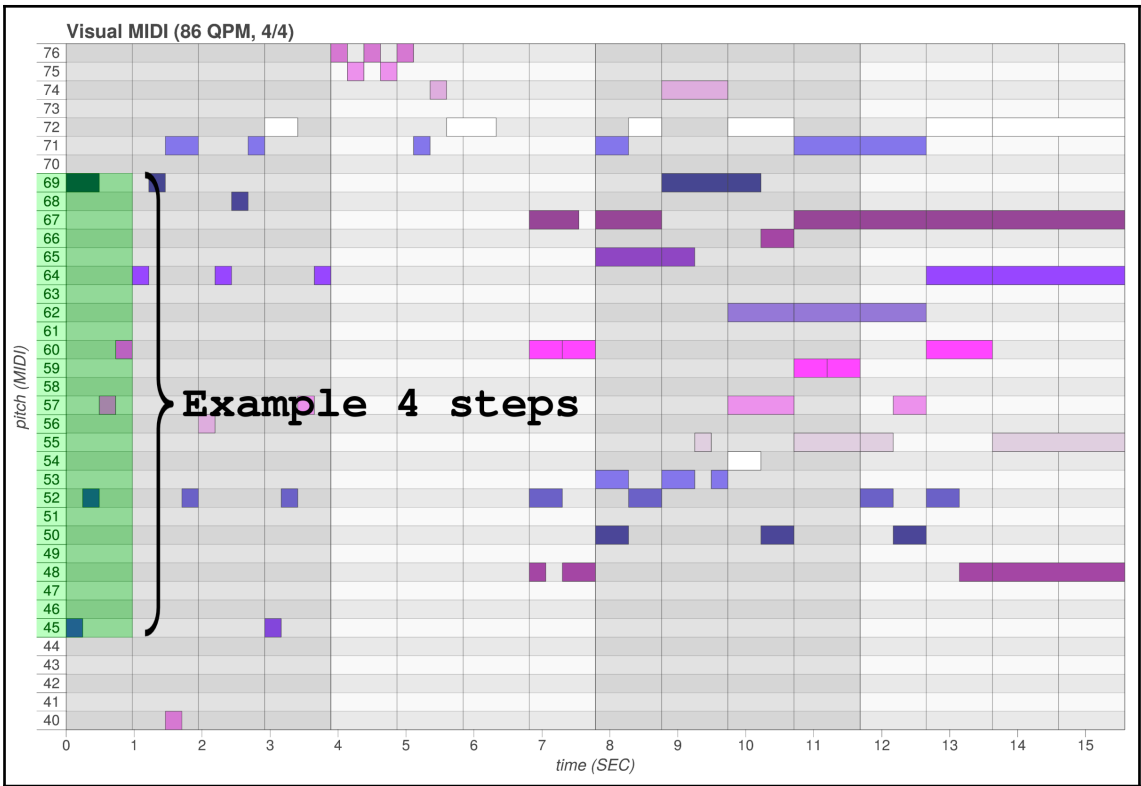


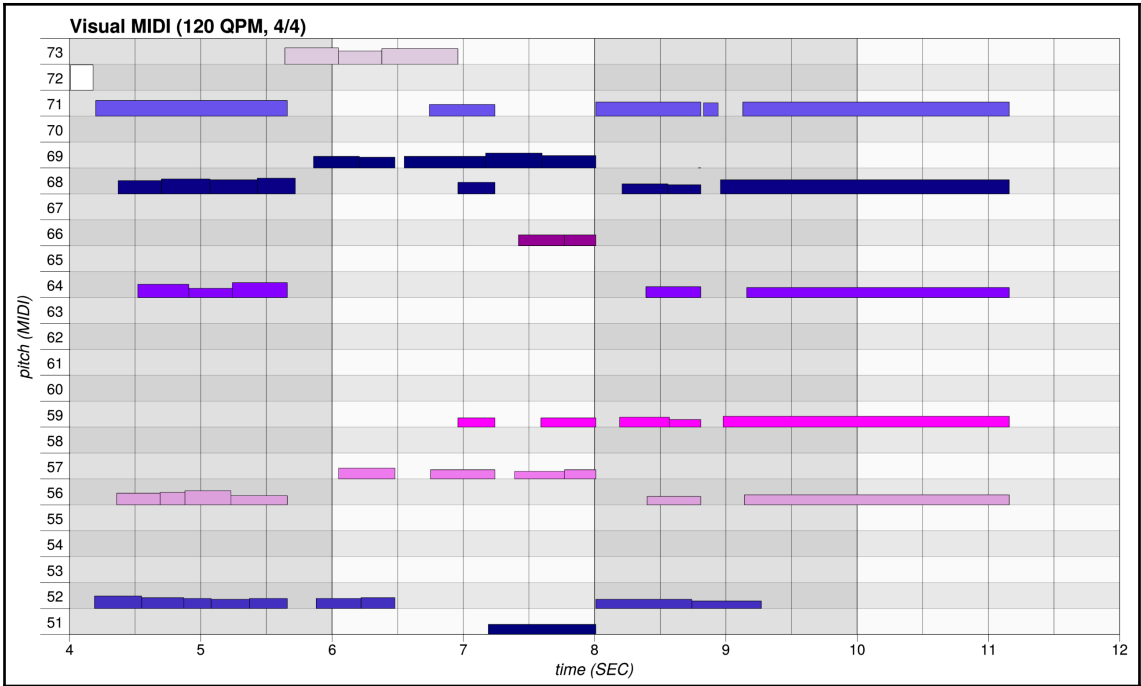






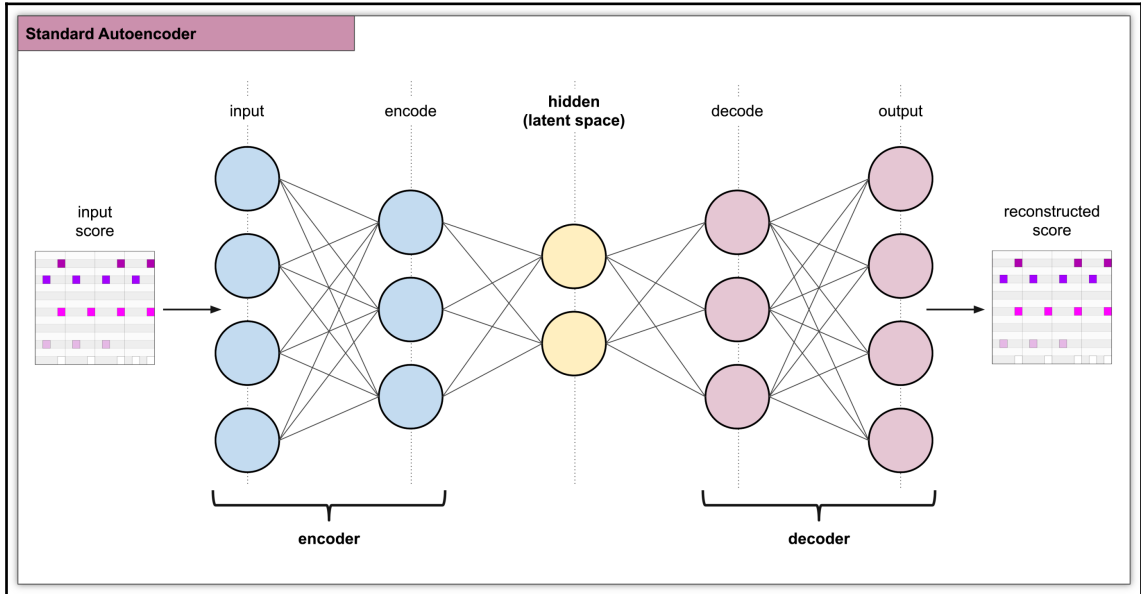


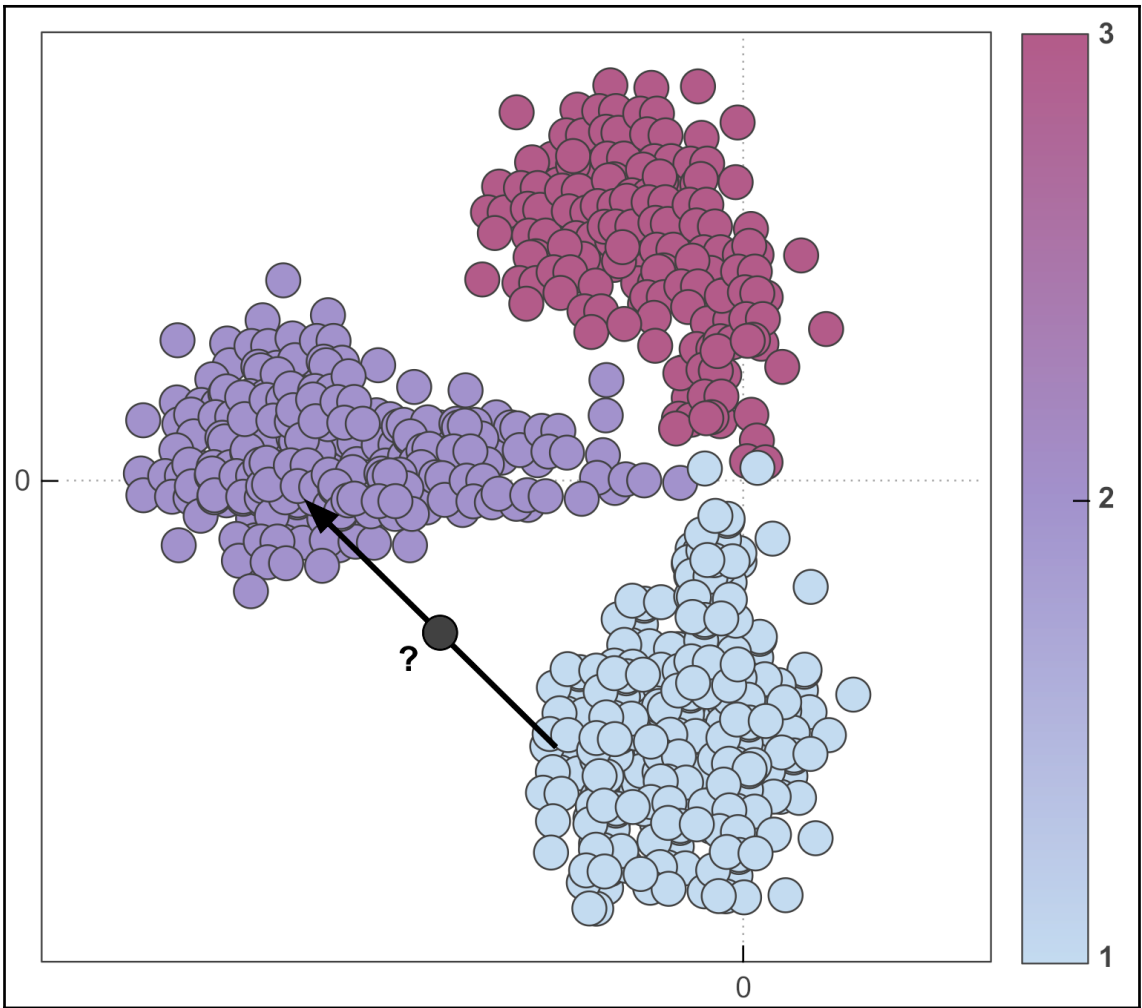


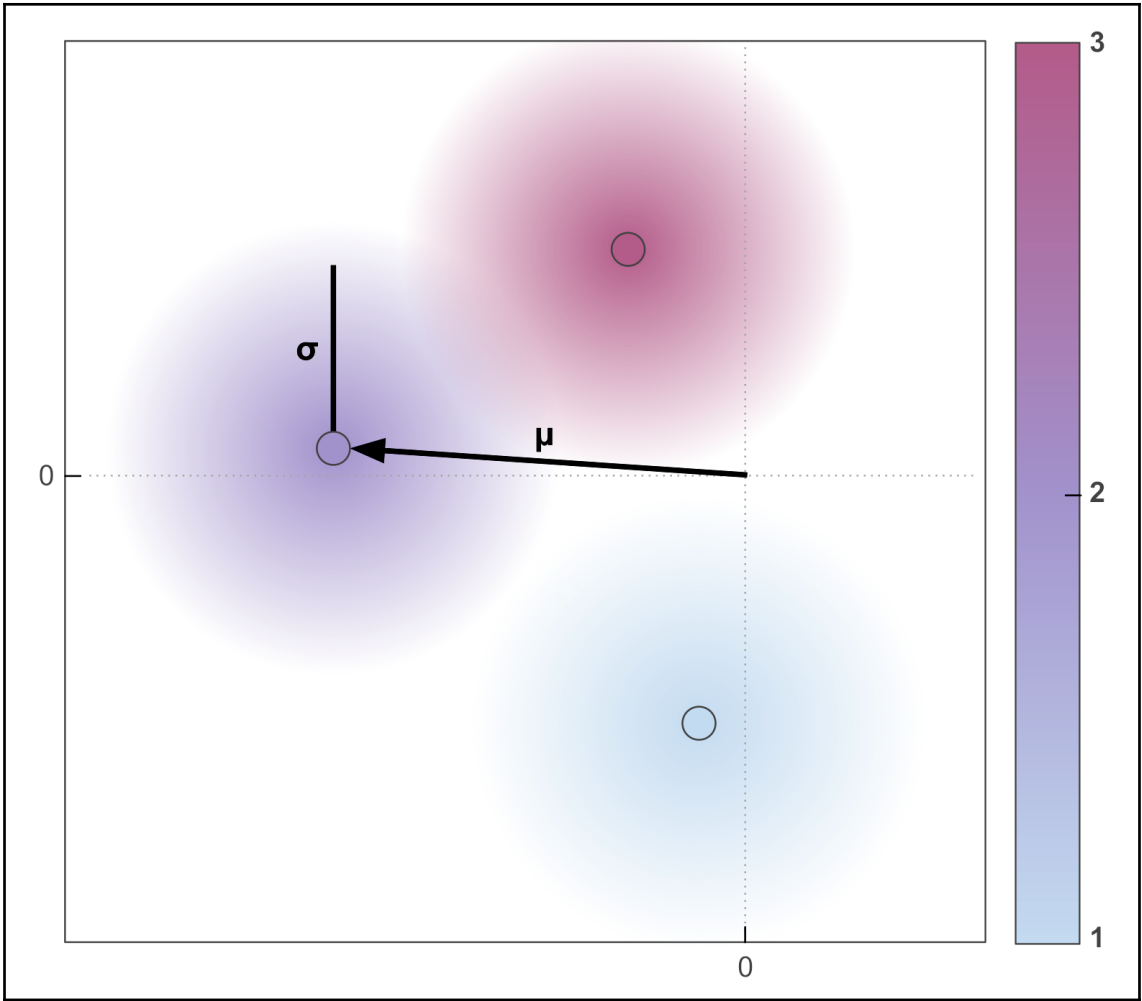


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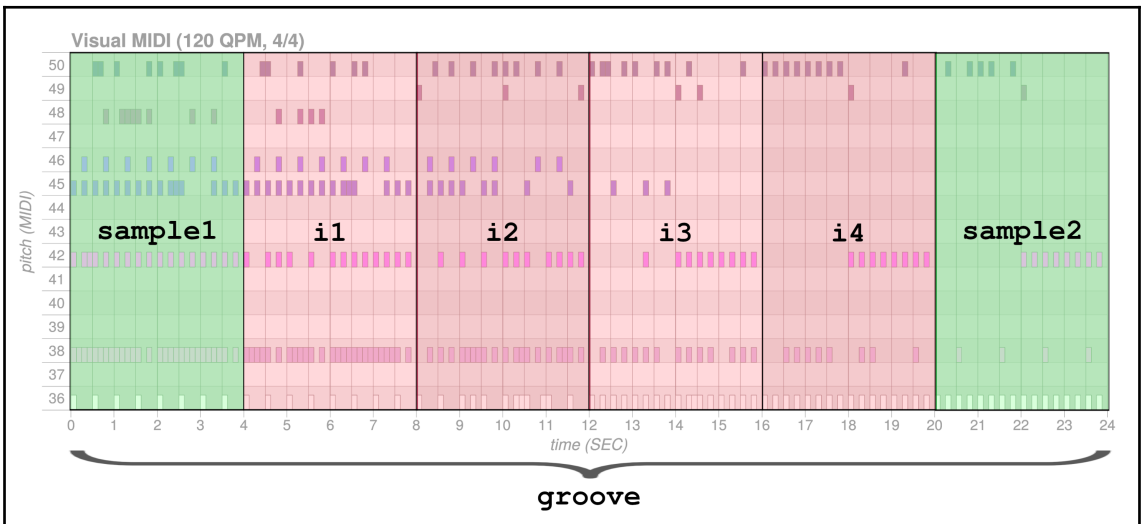
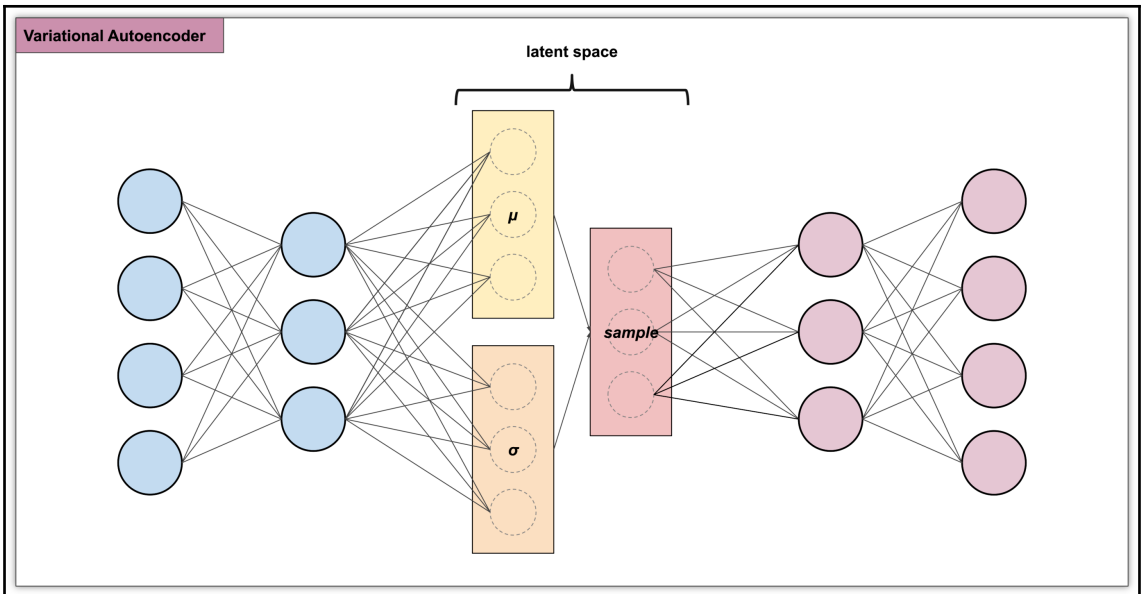
# Chapter 4: Latent Space Interpolation with MusicVAE

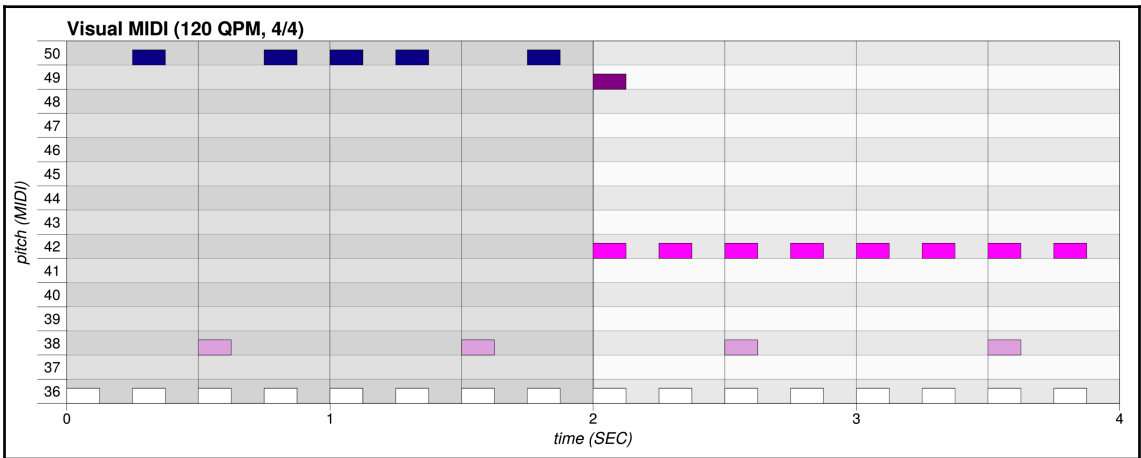
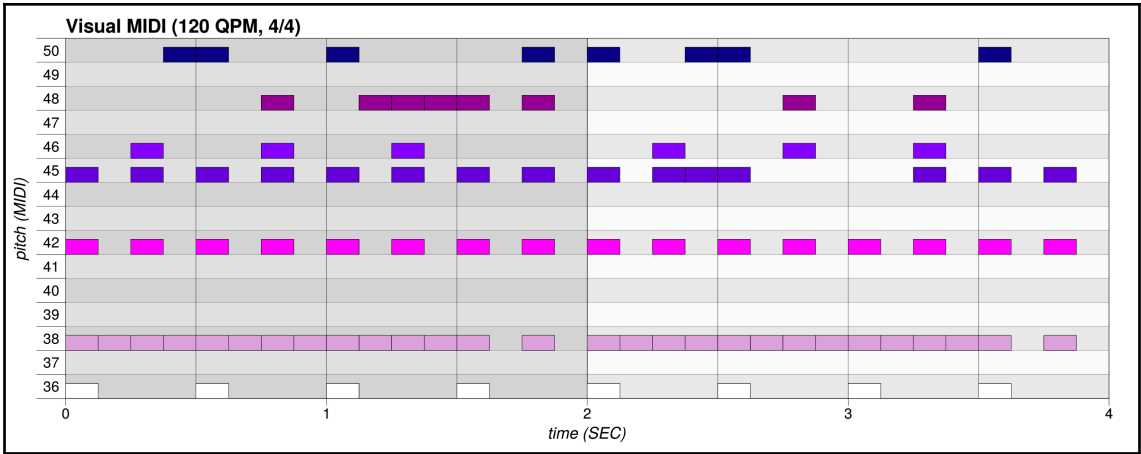


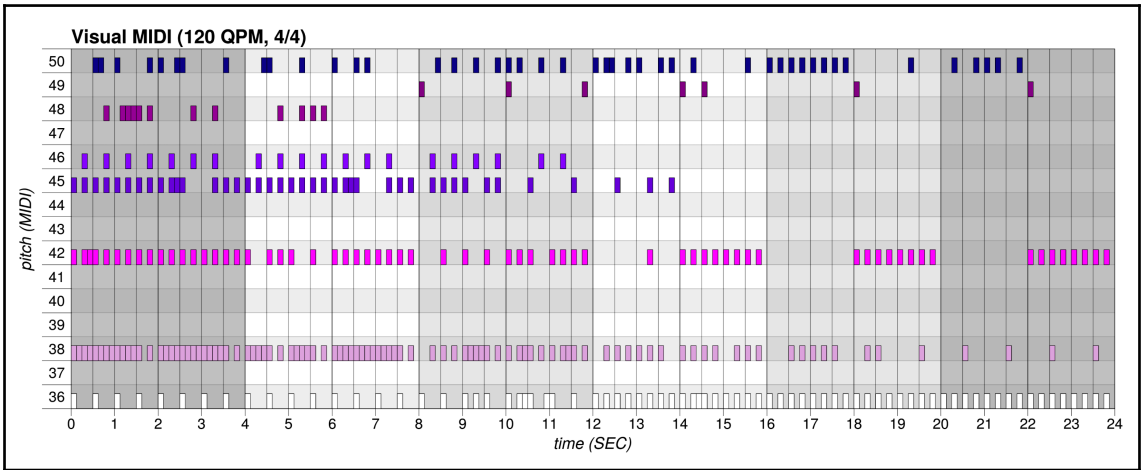
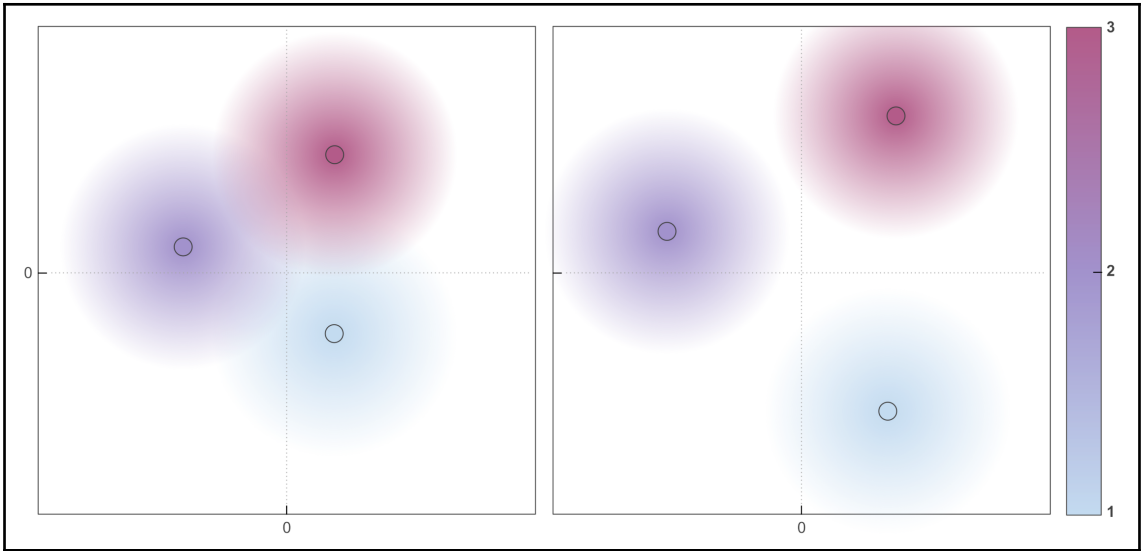


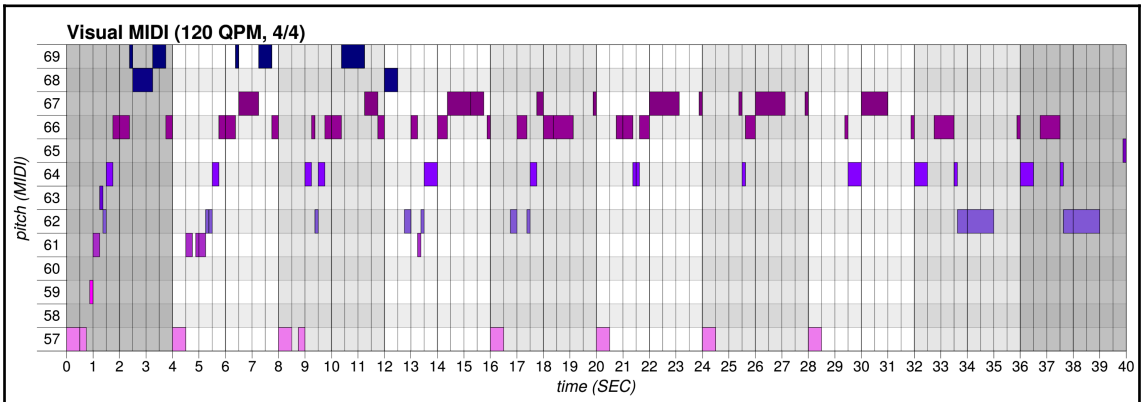
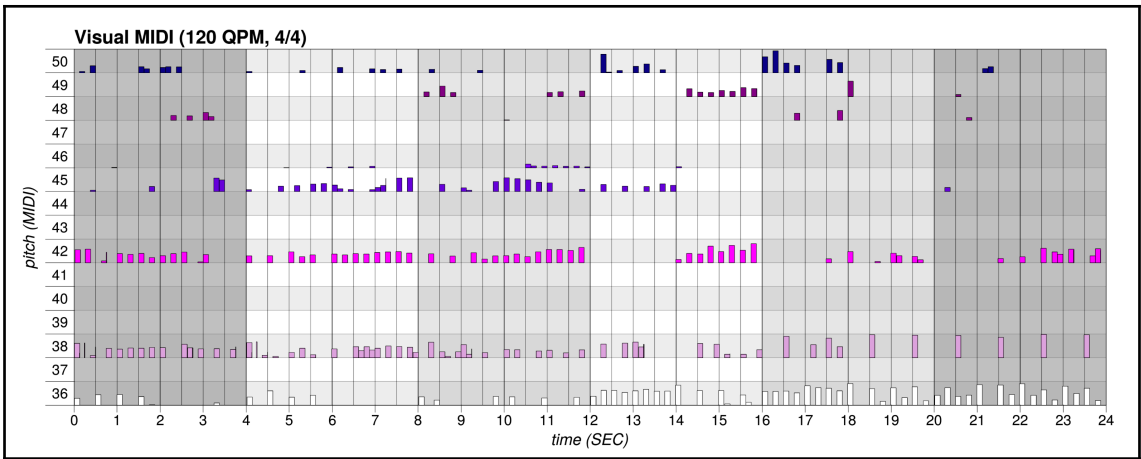


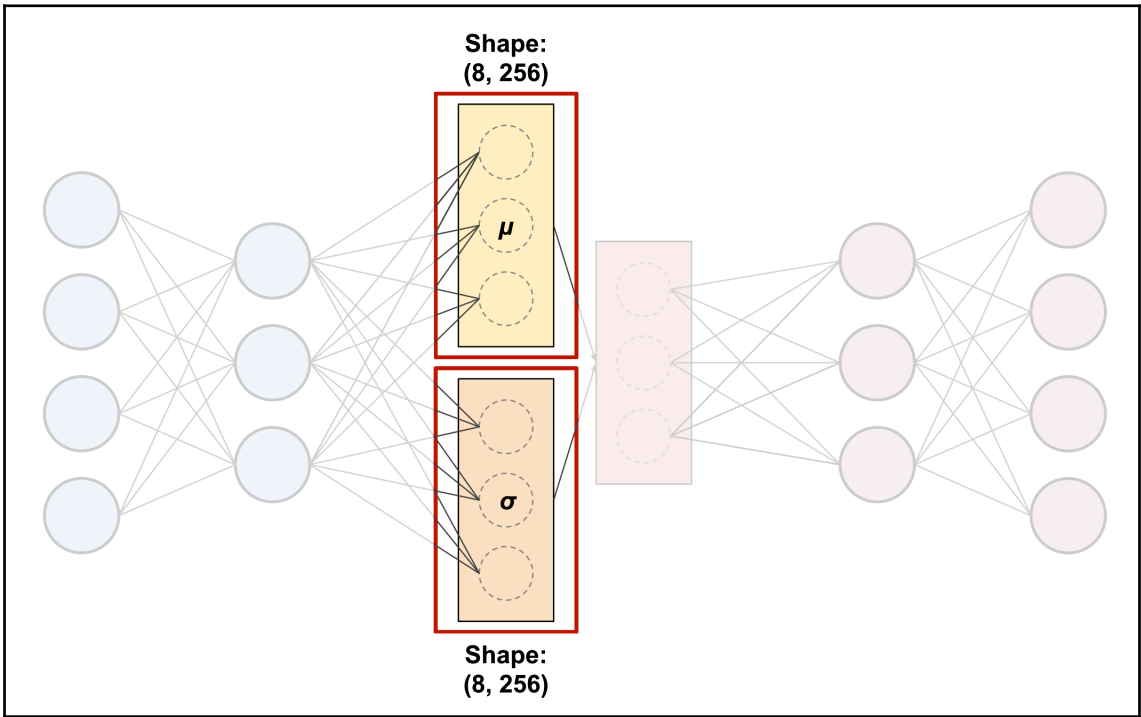
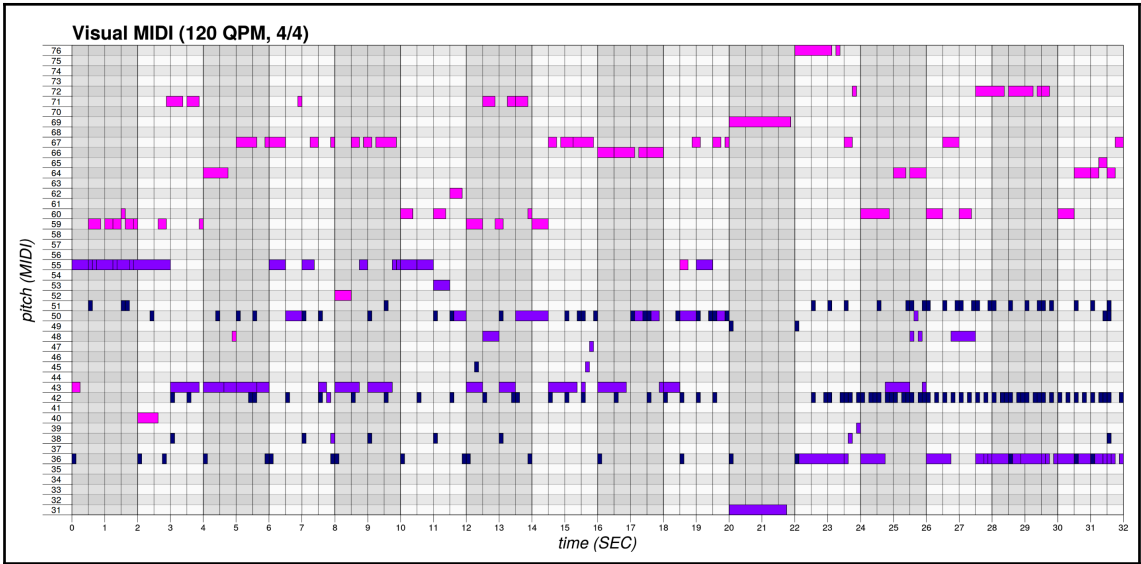




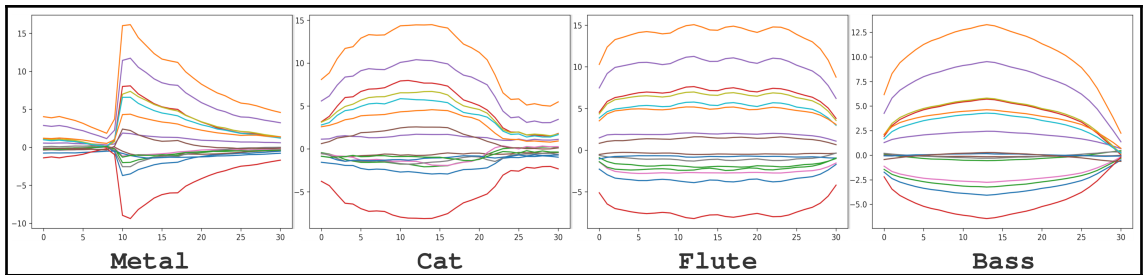
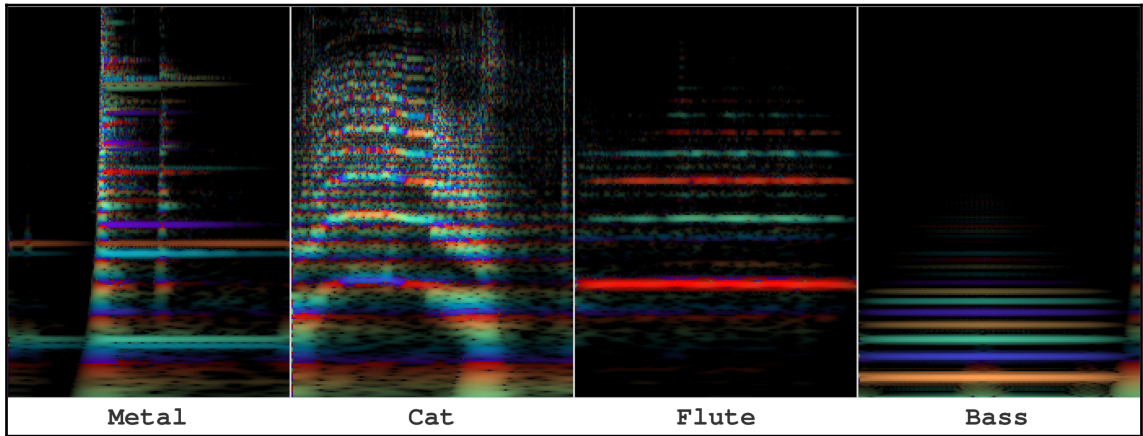
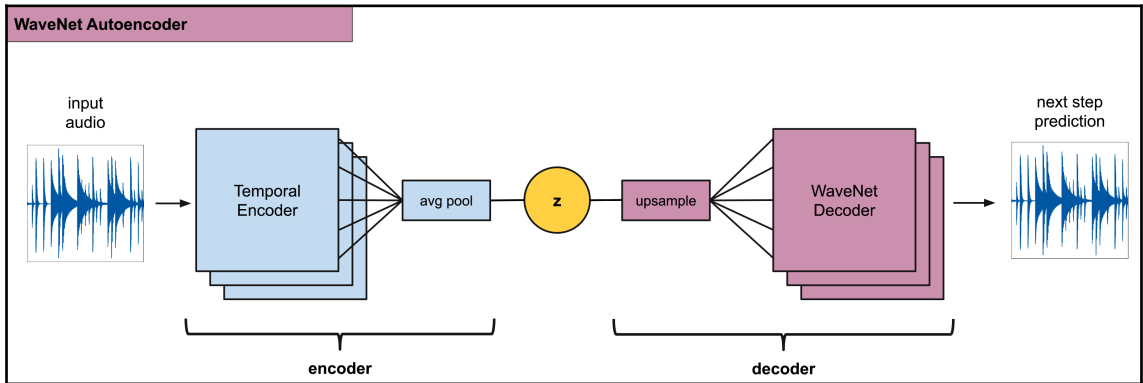


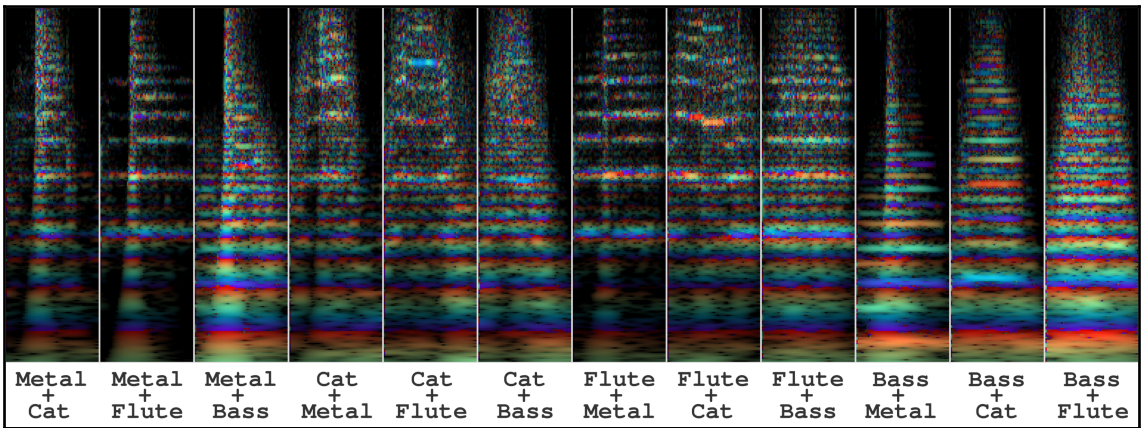
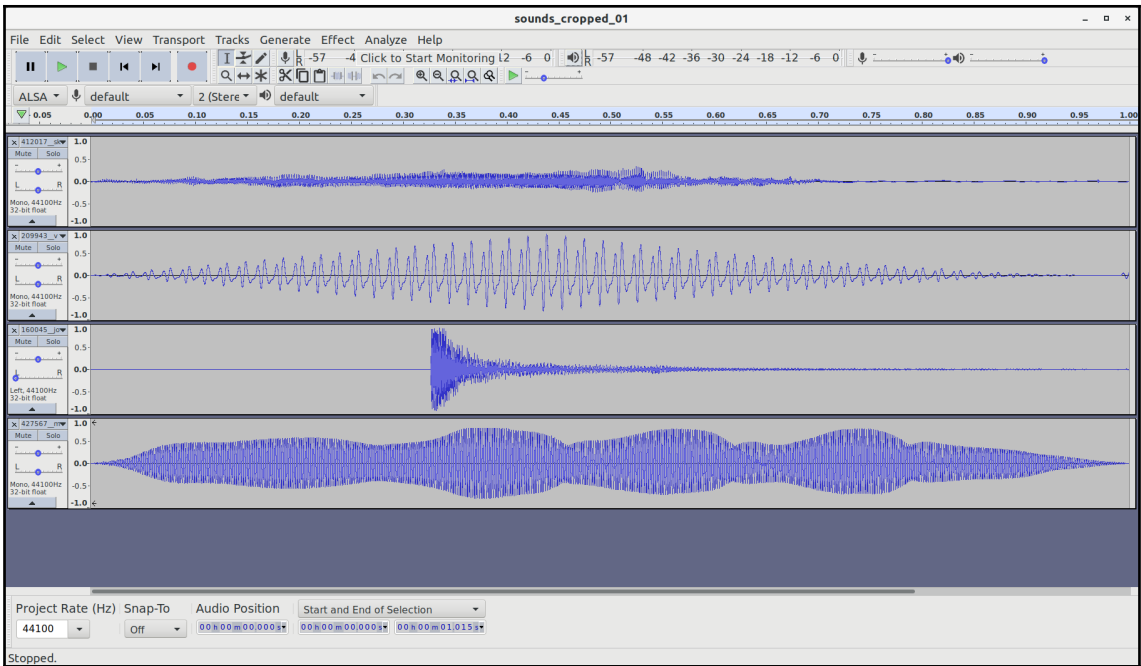


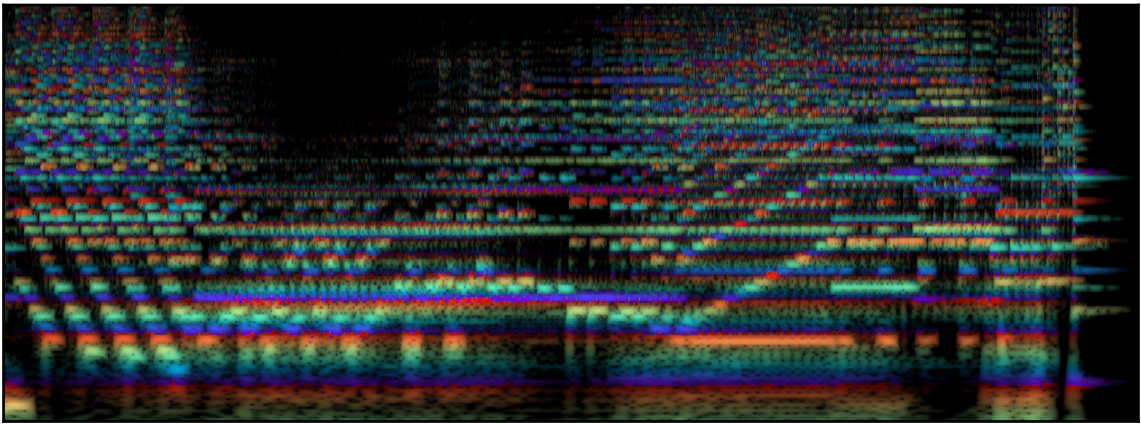
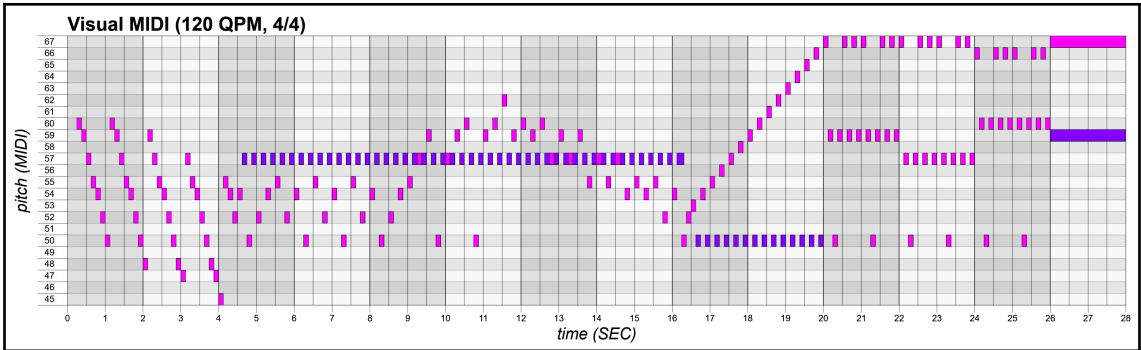




# Chapter 5: Audio Generation with NSynth and GANSynth



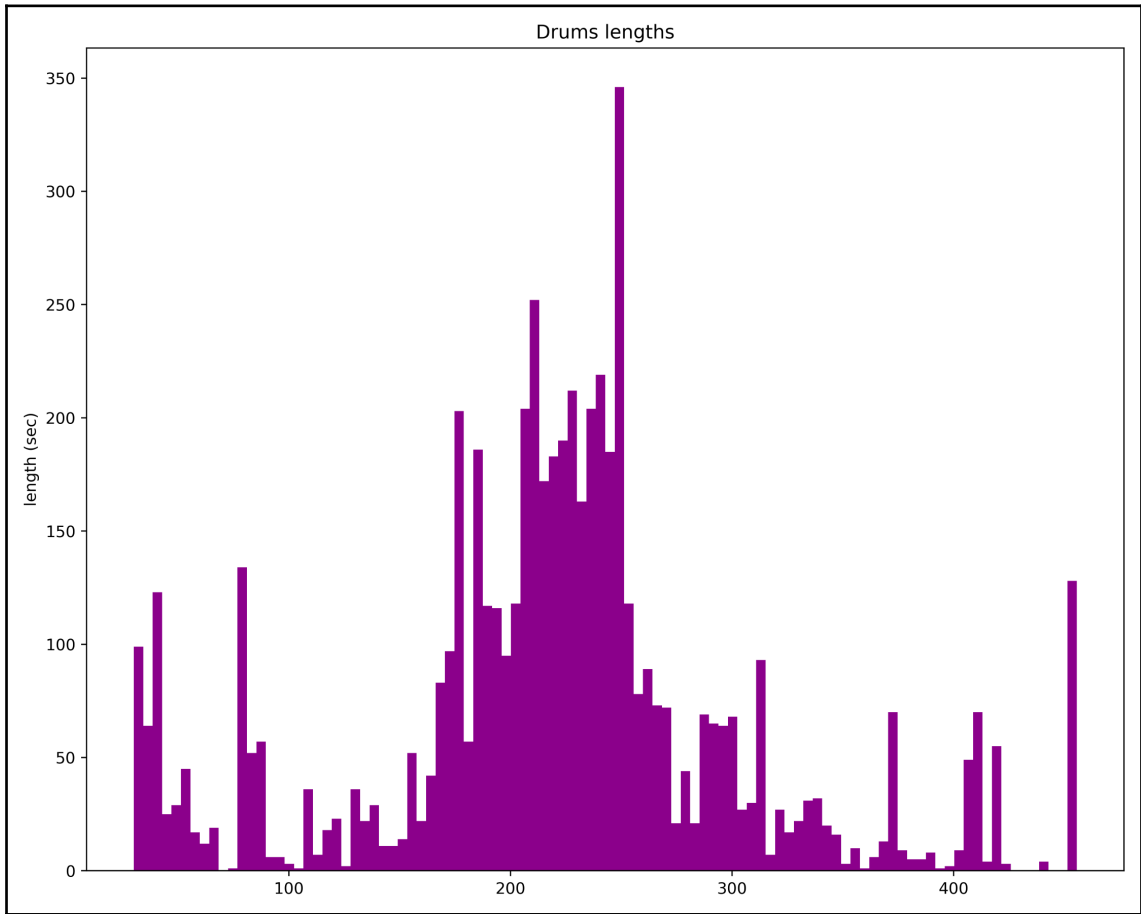


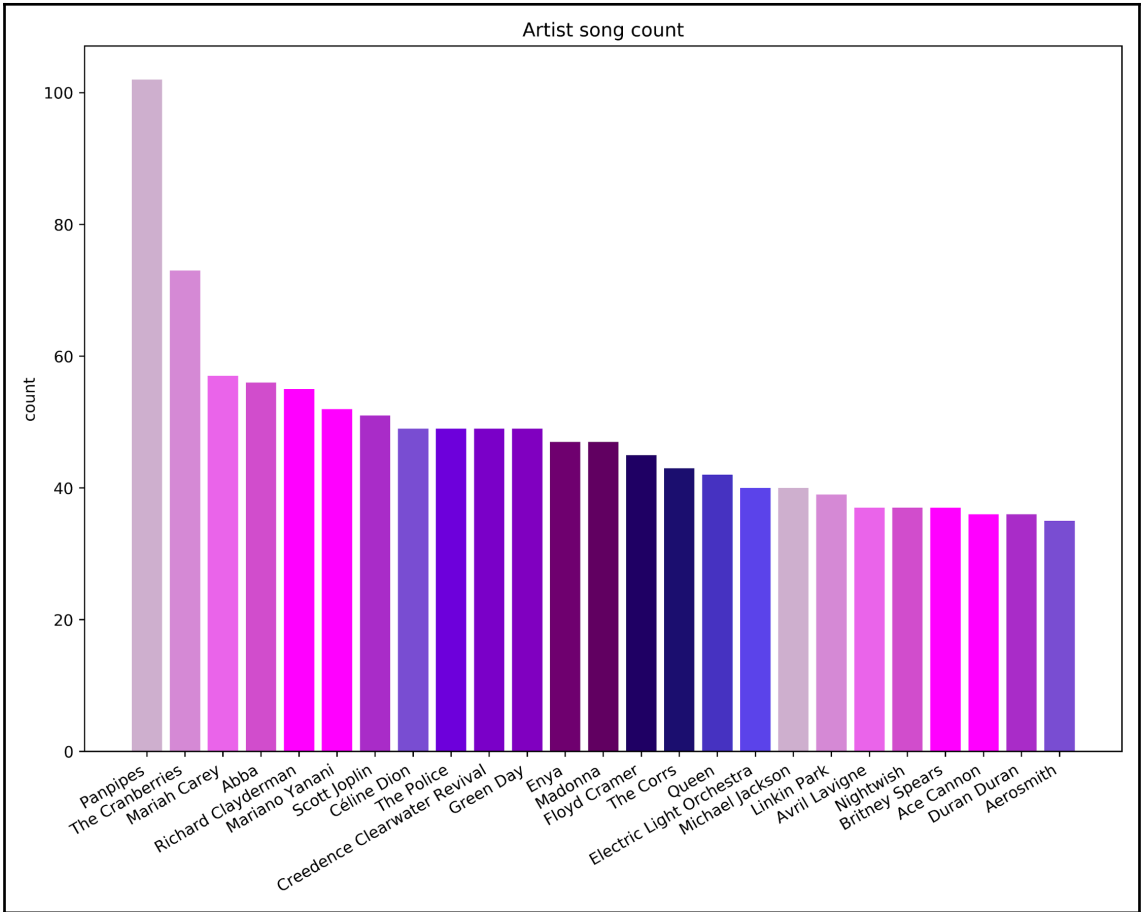


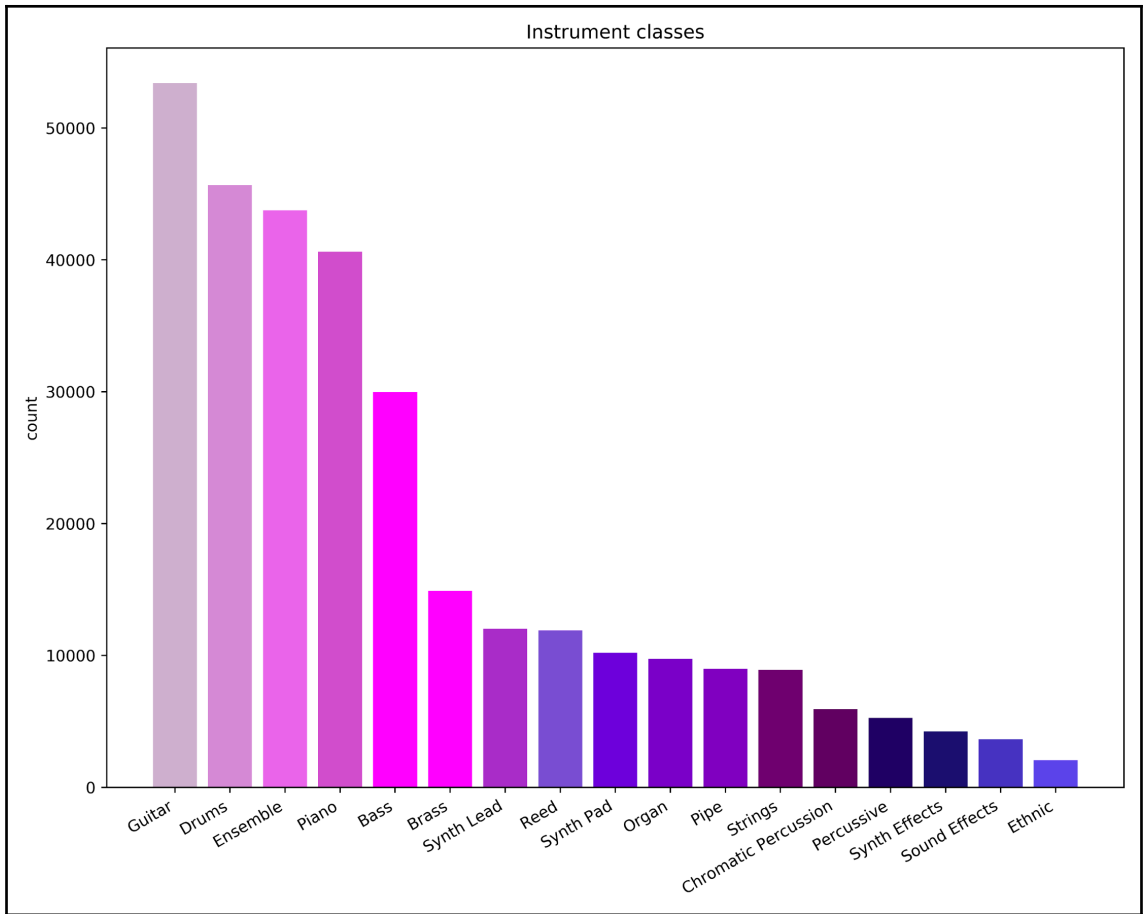


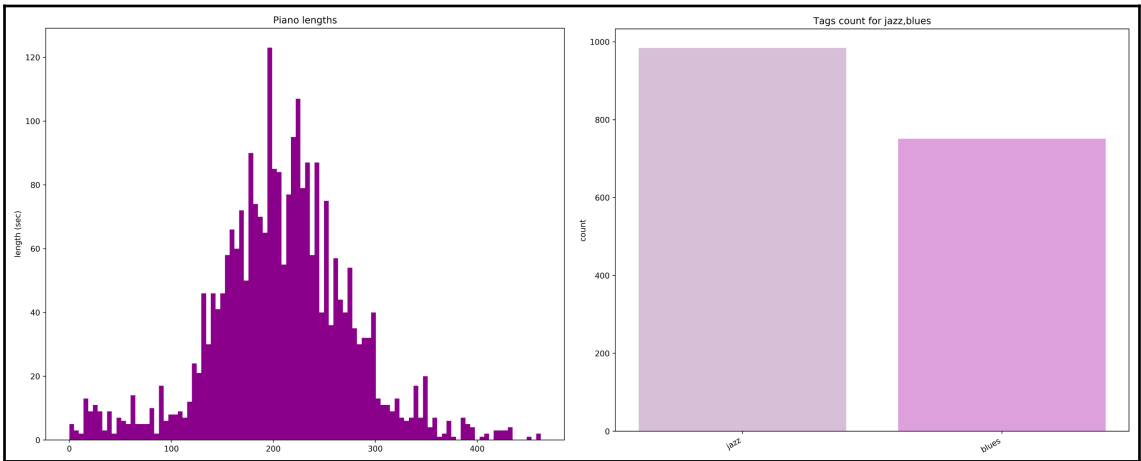
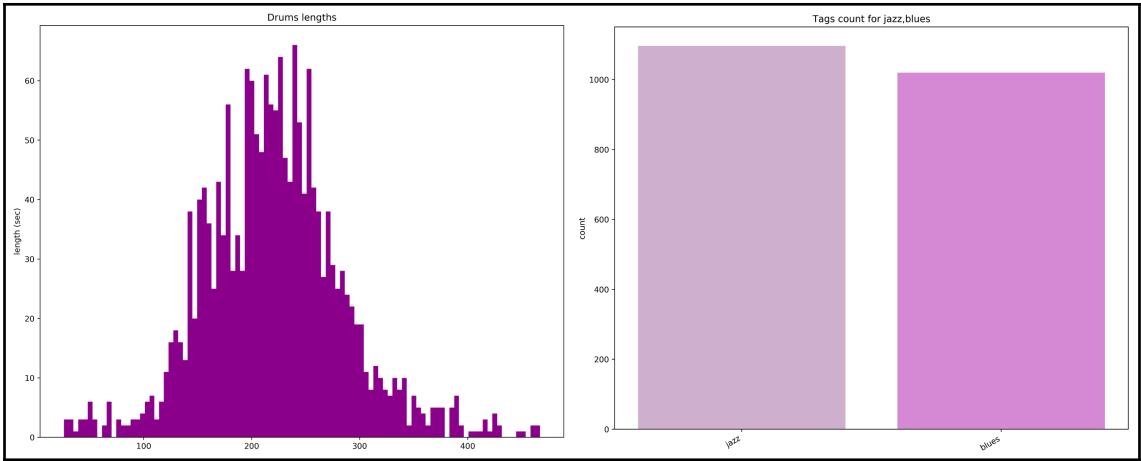
---

## Chapter 6: Data Preparation for Training









MuseScore 3: TRBEMXQ128E079851E\_0

File Edit View Add Format Tools Plugins Help

Page Width Continuous View

Concert Pitch

Feedback

12903CB0D31\_0 x TRAVLOE12903CB0D31\_1 x TRAVPOX128F1486662\_0 x TRAVPOX128F1486662\_1 x TRBCRH128F9322AR\_1 x TRBOD12903CACDHE\_0 x TRBOD12903CACDHE\_1 x TRBECHO128F42667BD\_0 x TRBEMXQ128E079851E\_0 x

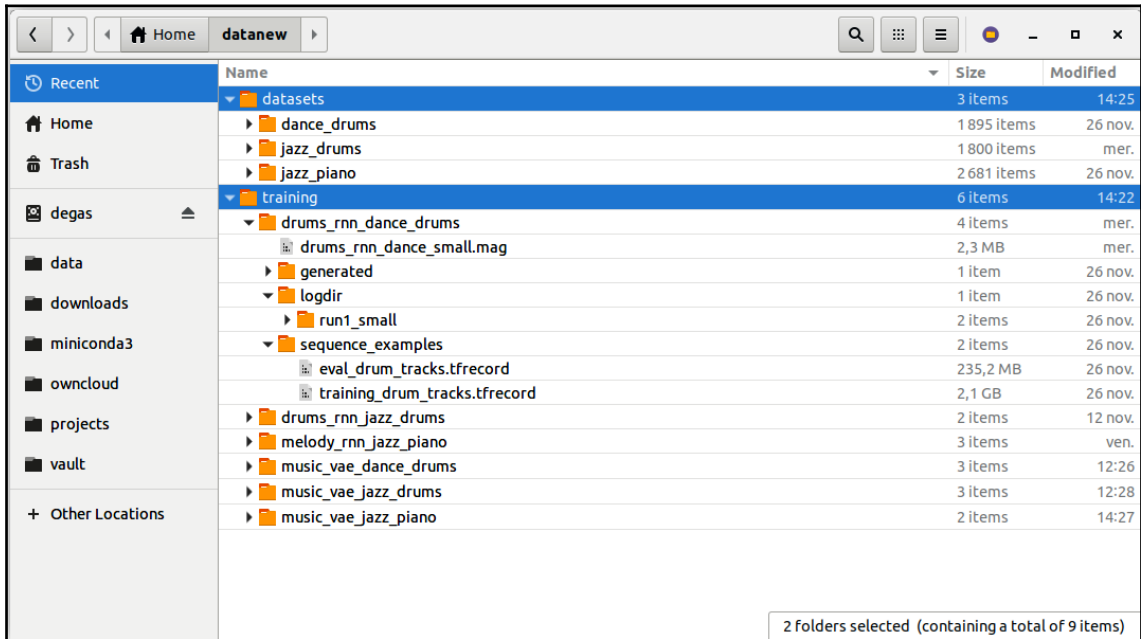
#65  
Piano

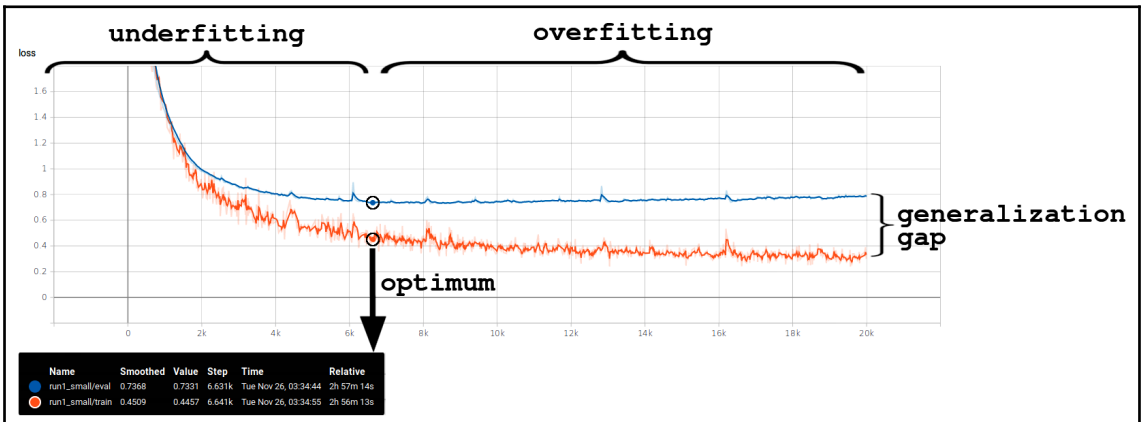
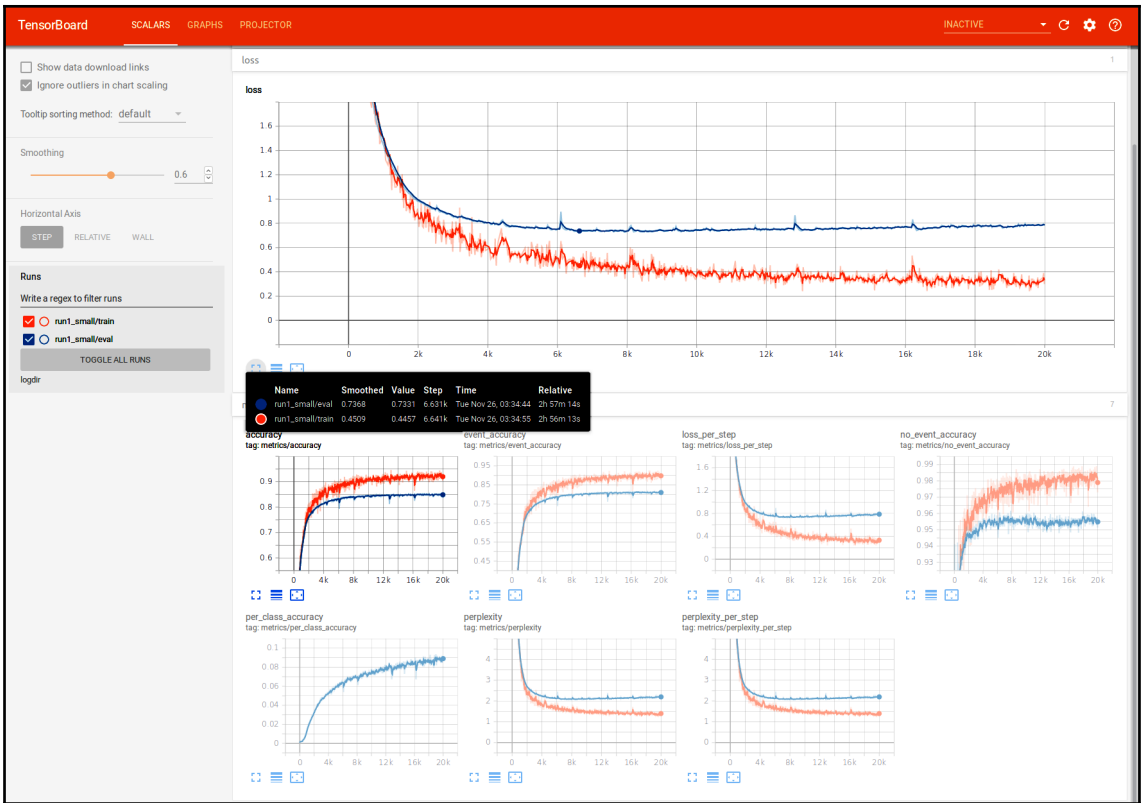
Show MIDI import panel

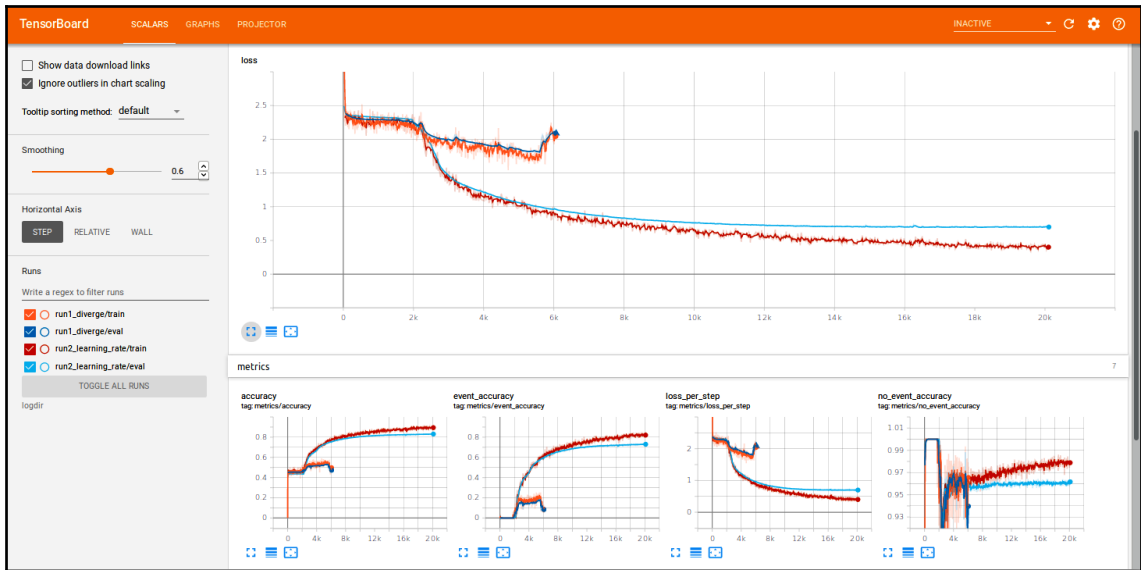
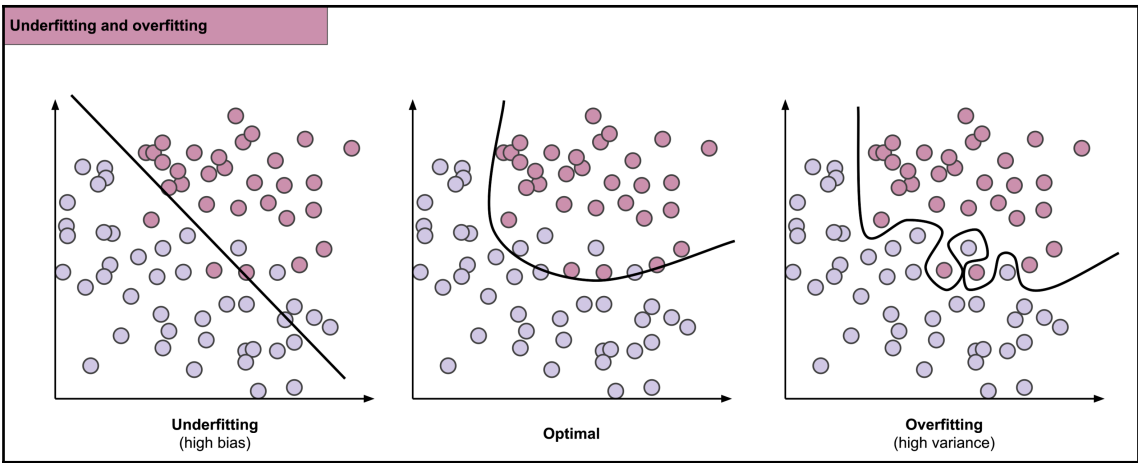
Note: Pitch: A1; Duration: Quarter; Voice: 1; Bar: 65; Beat: 4; Stave: 1

Play 66:02:000

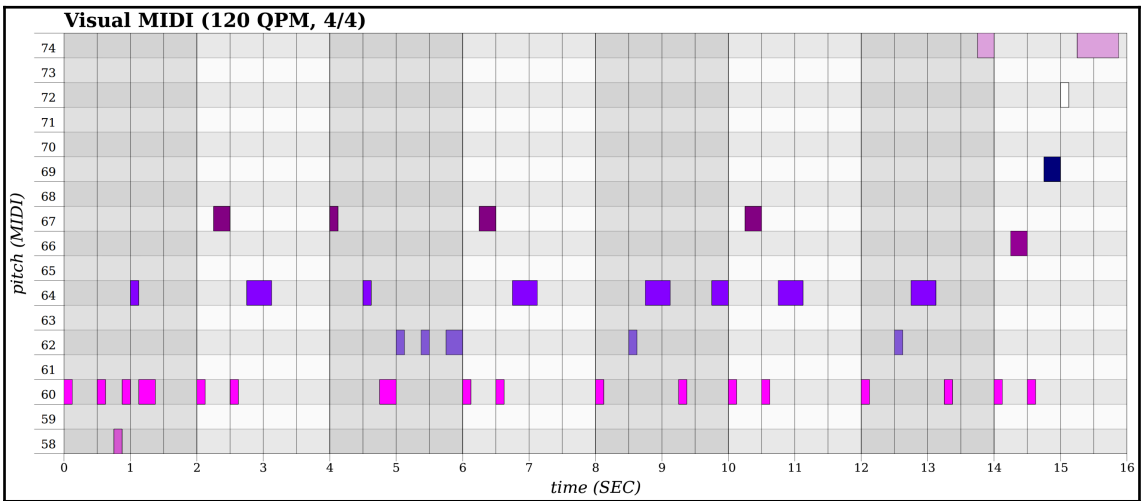
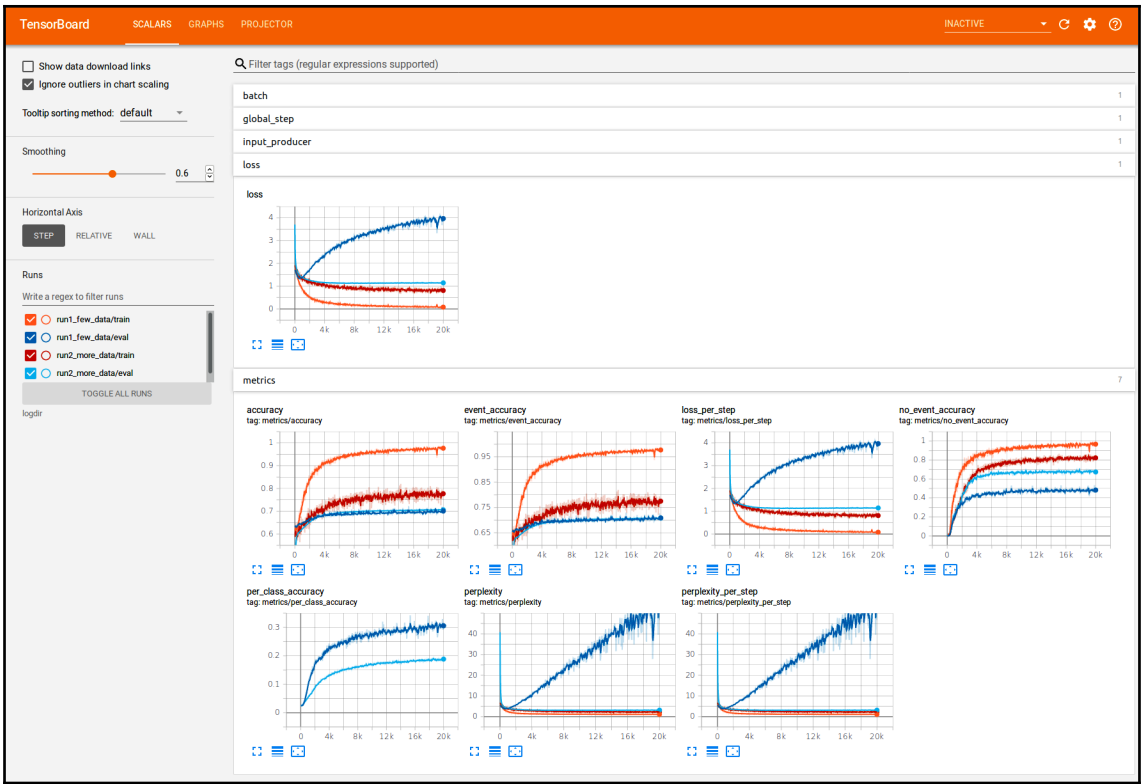
# Chapter 7: Training Magenta Models

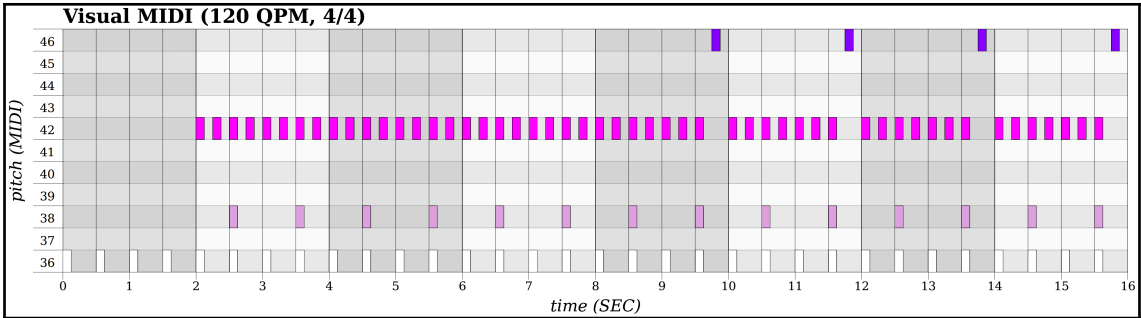












Google Cloud Platform | Magenta

## Create an instance

To create a VM Instance, select one of the options:

- New VM Instance** (Selected) - Create a single VM instance from scratch
- New VM Instance from template - Create a single VM instance from an existing template
- Marketplace - Deploy a ready-to-go solution onto a VM instance

**Name** ?  
Name is permanent  
magenta

**Region** ? **Zone** ?  
Region is permanent Zone is permanent  
europe-west1 (Belgium) europe-west1-b

**Machine configuration** ?

Machine family  
General-purpose | Memory-optimized

Machine types for common workloads, optimized for cost and flexibility

Series  
N1

Powered by Intel Skylake CPU platform or one of its predecessors

**Machine type**  
n1-standard-4 (4 vCPU, 15 GB memory)

	vCPU	Memory
	4	15 GB

**GPU type** **Number of GPUs**  
NVIDIA Tesla P100 1 X

Enable Virtual Workstation (NVIDIA GRID)

**Display device**  
Turn on a display device if you want to use screen capturing and recording tools.  
 Turn on display device

**\$926.50 monthly estimate**  
That's about \$1.269 hourly  
Pay for what you use: No upfront costs and per second billing  
[Details](#)

[CPU platform and GPU](#)

Google Cloud Platform Magenta

Container   
 Deploy a container image to this VM instance. [Learn more](#)

**Boot disk**   
 New 50 GB standard persistent disk   
 Image   
 Deep Learning Image: TensorFlow 1.15... [Change](#)

**Identity and API access**   
 Service account   
 Compute Engine default service account   
 Access scopes   
 Allow default access   
 Allow full access to all Cloud APIs   
 Set access for each API

**Firewall**   
 Add tags and firewall rules to allow specific network traffic from the Internet   
 Allow HTTP traffic   
 Allow HTTPS traffic

Management [Security](#) [Disks](#) [Networking](#) [Sole Tenancy](#)

**Shielded VM**   
 Select a shielded image to use shielded VM features.   
 Turn on all settings for the most secure configuration.   
 Turn on Secure Boot   
 Turn on vTPM   
 Turn on Integrity Monitoring

**SSH Keys**   
 These keys allow access only to this instance, unlike [project-wide SSH keys](#) [Learn more](#)   
 Block project-wide SSH keys   
 When checked, project-wide SSH keys cannot access this instance [Learn more](#)

user   

```

OOSMKdcEsX334KHcswPPzR0p1SoUpzC4zShvmNo37L
gBBntT77RgM5A1MsJJiA0c5FAU1r1LQepmSIw6WmPU
1+LsL//ceyIWHqXmqPaG1S8Acz1psRh3+M9o27gSE
LuToZeXyQA+cQqsZpm1wU1Q0UM1vkd07+J9XLF29B
gD2q50kp/Tmjuzv7abHj2rdoIk7qQv6UgP5e1Vt1k
efS7g6+n+cv91d1V4hsZw5QeXSBQpQ+Cyeh6TDR1S
jx_user@host
  
```

 X   
[+ Add item](#)

[Less](#)

You will be billed for this instance. [Compute Engine pricing](#)

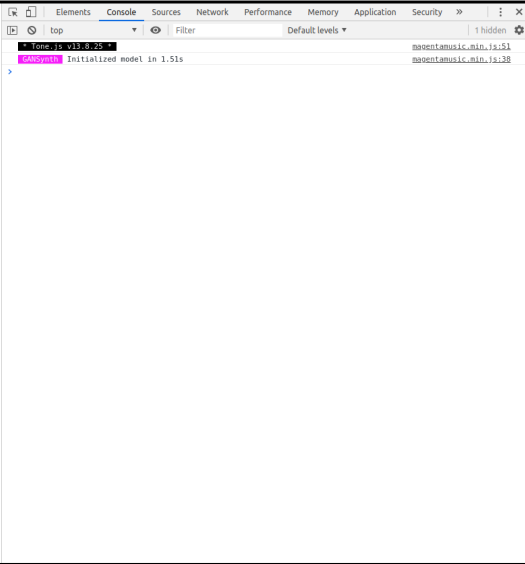
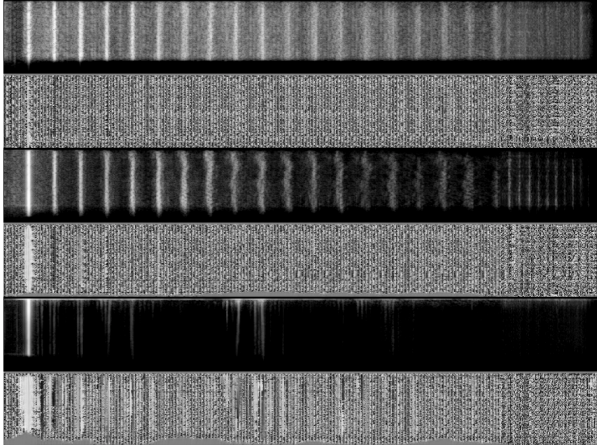
[Create](#) [Cancel](#)

# Chapter 8: Magenta in the Browser with Magenta.js

### Music Generation With Magenta.js - GANSynth example

Press "Sample GANSynth note" to sample a new note using GANSynth and play it immediately. You can layer as many notes as you want, each note will loop each 4 seconds.

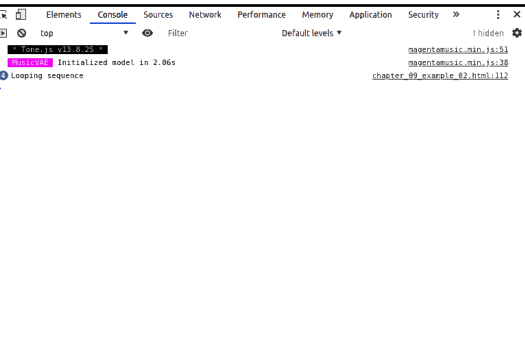
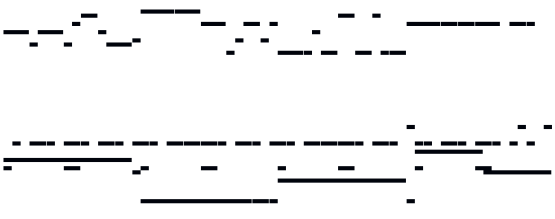
Reload the page to stop.



### Music Generation With Magenta.js - MusicVAE example

Press "Sample MusicVAE trio" to sample a new sequence of a trio of instruments (drum kit, bass, lead) using MusicVAe and play it immediately. The sequence will loop.

Reload the page to stop.





---

## Chapter 9: Making Magenta Interact with Music Applications

