

Sounding Africanfuturism: Compositional
Influence from Artificial Intelligence and
Aesthetic Discernment for *Biological Guide to
the Stars – Binti*

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Introduction

This thesis documents the implementation of compositional techniques and computer-aided composition. With connections to artificial intelligence, Artificial Intelligence Augmentation (AIA) has benefits for musical creativity and computer-aided models in music composition developments in neural networks and deep learning.¹ Aesthetic grounds in the interdisciplinary study of musical generation with AI take root in science fiction writings as on constant reimagining of how humans can better interface with synthetic systems for use. Synaptic, electric, and frenetic connections consistently inform a traditional humanoid vibrantly interfacing with technological connections on a sensible level and relating to the senses, if not biological. Philosophical inquiries into redefining and retaking the agency of the works made within futurism, specifically Africanfuturism, breathe life into aesthetic imaginings of musical futurity.²

This paper describes the layout and background of the machine learning modules and their uses in composition. Then Magenta and Tensorflow are used as powerful open-source libraries for music creators and understandable interfaces (effectively AI), leading to the tools and the AI used for composition through Ableton Live, MaxScore, LiveScore, and MuseScore. I then discuss Africanfuturism and its uses as a concept, musical reference to African or “other,” its uses in science fiction, Afrofuturism for musical context, non-western binding of the juxtaposed Africanfuturism for context, and unique musical parameters. The basis of Africanfuturist fiction is the novel *Binti* by Okorafor. *Binti* is used as a lens to explore this technology as a part of a larger creative process in music composition. I discuss the separate cultural factions depicted in the novel (the Himba, Khoush, and Meduse) and how I assign musical aesthetics to the content that trains their AI. My composition, *Biological Guide To The Stars*, maps musical characteristics to Africanfuturist thought in action. There are interpretations of what constitutes the resulting music and what future research can do with the assignment of AI to seek out ways of sounding fiction, especially Africanfuturism.

¹ Shan Carter and Michael Nielsen, “Using Artificial Intelligence to Augment Human Intelligence,” *Distill* 2, no. 12 (December 4, 2017): e9, <https://doi.org/10.23915/distill.00009>; Gaëtan Hadjeres, François Pachet, and Frank Nielsen, “DeepBach: A Steerable Model for Bach Chorales Generation,” *ArXiv:1612.01010 [Cs]*, June 17, 2017, <http://arxiv.org/abs/1612.01010>; Adam Roberts et al., “A Hierarchical Latent Vector Model for Learning Long-Term Structure in Music,” *ArXiv:1803.05428 [Cs, Eess, Stat]*, November 11, 2019, <http://arxiv.org/abs/1803.05428>; Cheng-Zhi Anna Huang et al., “Music Transformer,” *ArXiv:1809.04281 [Cs, Eess, Stat]*, December 12, 2018, <http://arxiv.org/abs/1809.04281>.

² Carl Death, “Africanfuturist Socio-Climatic Imaginaries and Nnedi Okorafor’s Wild Necropolitics,” *Antipode* 54, no. 1 (2022): 240–58, <https://doi.org/10.1111/anti.12764>; Nnedi Okorafor, “Africanfuturism Defined,” October 19, 2019, <http://nnedi.blogspot.com/2019/10/africanfuturism-defined.html>.

Africanfuturism

Africanfuturism is a term coined by Nigerian-American author Nnedi Okorafor in 2019.³ It is a term meant to define, directly compatible with Afrofuturism yet separated from the definition of that same idea.

Okorafor states that there are similarities, but “the difference is that Africanfuturism is specifically and more directly rooted in African culture, history, mythology, and point-of-view as it then branches into the Black Diaspora, and it does not privilege or center the West.”⁴ Okorafor also states that “Africanfuturism does not HAVE to extend beyond the continent of Africa, though often it does. Its default is non-western; its default/center is African.”⁵ Okorafor uses it as an afterthought to the Africanfuturist fiction she writes to define her works, and there are no other ways to explain the concept currently.

Africanfuturism in fiction is more of a way of description and bridge to connect all blacks of the Diaspora. Therefore, its uses in fiction are relatability. As Okorafor describes, “The last thing I will say on this is that Africanfuturism is rooted in Africa and then it branches out to embrace all blacks of the Diaspora, this includes the Caribbean, South American, North American, Asia, Europe, Australia...wherever we are. It’s global. Africanfuturism is not a wall, it’s a bridge.”⁶

An inherent difference separates the two concepts, with their center and default. A realignment of somewhat performance practice in the form of literary works and an urge for definitions separate from Western conception are the basis of the intention of Africanfuturism. The main point of difference isn’t for purely vain purposes; it situates her work in a new literary, aesthetic, and cultural movement that needs further definition. Along those lines, the separation of Africanfuturism and Afrofuturism is something crucial to discuss aesthetically and by which some musical parameters and reflections might change via a semantic and theoretical change musically. Because of Afrofuturism’s Western view, I have the agency to attach it to Western notions related to aesthetic means. Leaving Africanfuturism in a place or need for some musical definition is the goal.

Afrofuturism for musical context

I aim to determine the musical parameters of Africanfuturism with an intent to hash out the aesthetic by viewing set musical parameters relating to her works. The musical reference to the African or “other” in the compositional form is purely in the creational process.

³ Death, “Africanfuturist Socio-Climatic Imaginaries and Nnedi Okorafor’s Wild Necropolitics.”

⁴ Death; Okorafor, “Africanfuturism Defined.”

⁵ Death, “Africanfuturist Socio-Climatic Imaginaries and Nnedi Okorafor’s Wild Necropolitics”; Okorafor, “Africanfuturism Defined”; Teresa Colliva, “Nnedi Okorafor: Trajectories of an African Futurism,” *Il Tolomeo*, no. 1 (December 20, 2021): JournalArticle_6924, <https://doi.org/10.30687/Tol/2499-5975/2021/23/022>.

⁶ Okorafor, “Africanfuturism Defined.”

The unique musical parameters that make Africanfuturist music in practice are Africanfuturist fiction in mind during the creation of the piece, thoughts of an African or “other” future in the design, and multiple conflicting melodic lines occurring at once, moving narrative and rhythm as the melody for vivid storytelling purposes. The musical connection is a set of parameters. In the case of *Biological Guide To The Stars*, the lending guidelines are the factions that correspond to the instrumental groups in the composition and, more importantly, a difference in the AI which generates the MIDI files.

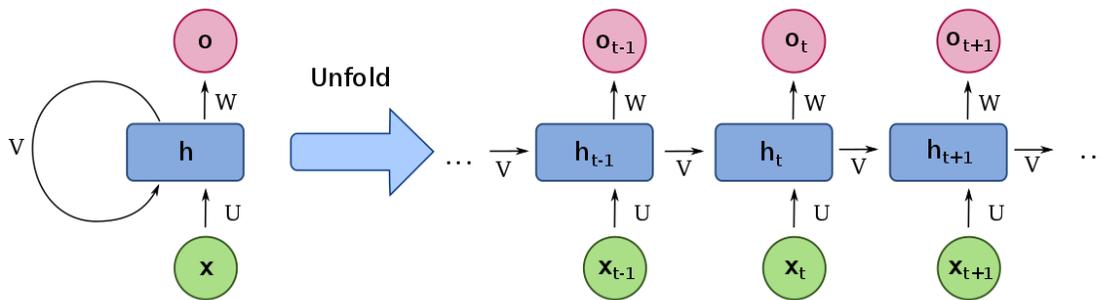
Combining those inquiries about musical futurity and Africanfuturism with the recent remarkable advancements in Musical Metacreation (MuMe), I define musical parameters for Africanfuturism and, in turn, a musical future. I use technological searches into AI for musical melodic and harmonic content from the extraction of note sequences from musical instrument digital interface (MIDI) files. I then use this to define the “other” from a musical perspective that Nnedi Okorafor touches on as a primary factor of Africanfuturism and the aesthetic musical characteristics of that genre or style.

The culmination is combining machine learning with a human arranger co-composition and a more broad array of musical parameters that can identify Africanfuturism. In Africanfuturist fiction, *Binti* by Nnedi Okorafor, I create my work *Biological Guide To The Stars*. In the compositional process and creation, I provide futurist thinking by mapping factions to instrument groups first in Ableton Live. I then train three separate AI for each group using Magenta.js and TensorFlow.js using JavaScript libraries through Python, laying out the instrument groups by viewing the MIDI files generated in a scoring perspective using LiveScore and MaxScore. It results in a work that transfers to MuseScore as a practical MIDI score viewable for prominent aspects of form and effectively an evocative view of the other in a co-composition between man and machine representing musical parameters of Africanfuturism in action in its creation.

Recurrent Neural Network (RNN)

Using deep neural networks and AI enables the direct learning of the structure of musical data, requiring fewer hand-tuned features and heuristics. The creative process reduces the reliance on Western music theory to form new compositional techniques using generative models that provide fewer constraints, freeing aesthetics by not imposing rules that imply a distinct style or genre.

Recurrent neural networks improve on traditional ones in one key area, persistence or recollection. It does this in one significant way: the loop allows information to recall for further use. The recurrent loops will enable the passing of data from the steps of the network to the next steps that make up the network. Figure 1 below shows a part of the neural network, h , which looks at any input from x and outputs the value of o .



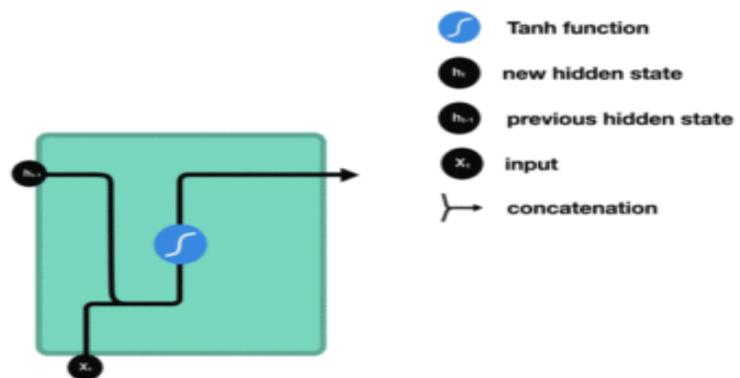
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Figure 1

RNNs have many uses for issues, but the primary one that we are using them for is music modeling. Recurrent neural networks closely relate to sequences and lists like a chain-like structure. Figure 1 is also an example of an unfolded recurrent neural network, which partly explains its multiplicity visually. “LSTMs” is a unique RNN that works better than the original, which we will dive into in the next section.

Long Short-Term Memory (LSTM)

Long Short Term Memory networks (LSTM) are unique RNNs capable of learning long-term dependencies.⁷ The standard RNNs have simple construction, like a single tanh layer. In solution to the issue of recollection, long-term memory is their default behavior.

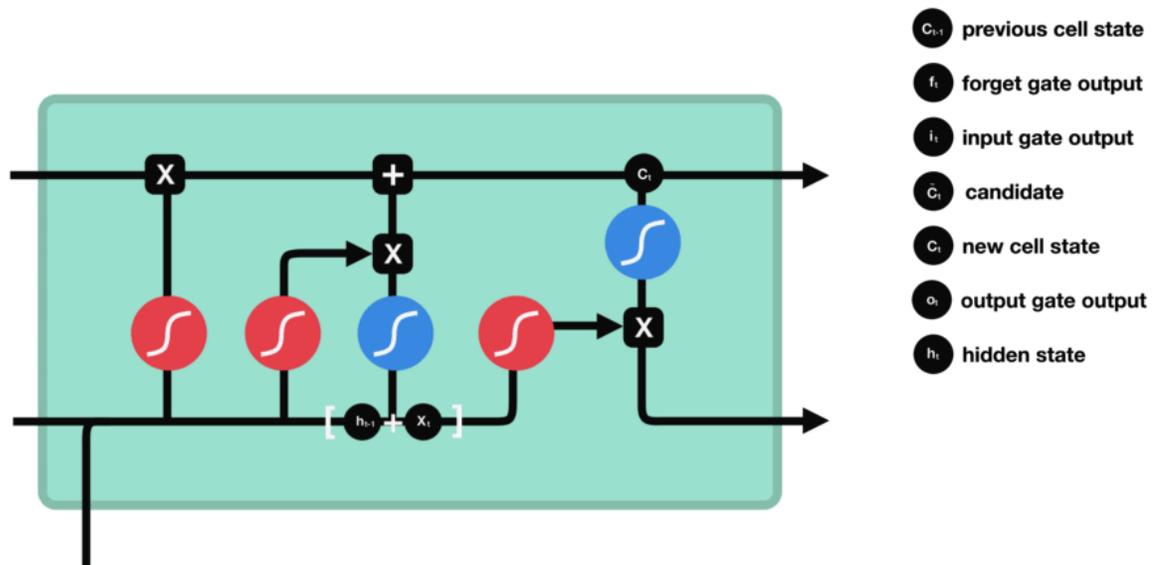


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Figure 2

⁷ Sepp Hochreiter and Jürgen Schmidhuber, “Long Short-Term Memory,” *Neural Computation* 9, no. 8 (November 1997): 1735–80, <https://doi.org/10.1162/neco.1997.9.8.1735>.

As Figure 2 shows, one can see that the tanh function is a single layer in what could be a larger structure. For LSTMs, more complex information fits inside the structure, quadrupling its layers. Figure 3 below shows multiple layers' interaction and a key to LSTMs, the cell state.



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Figure 3

An LSTM has three gates to safeguard and monitor the cell state. The horizontal line at the top is the cell state, working as a connector for the gates. Gates allow information to write and erased from the cell state. They can also let information through and are composed out of a sigmoid neural net layer and a pointwise multiplication operation. The sigmoid layer, shown as a red circle in Figure 3, outputs numbers between zero and one, describing how much of each component should be let through. A value of zero means “let nothing through,” while a value of one means “let everything through!”⁸ In conclusion, there are variations of the LSTM that are better suited to specific tasks than others. I use the RNNs and LSTMs from open-source Magenta.js, Melody RNN, and the Polyphony RNN.

The uses in music composition for RNNs have been in constant research since the early 1990s, and Magenta.js has a MusicRNN class for that information. In the creation of Magenta.js, Adam Roberts discusses:

Magenta.js contains a MusicRNN class based on a combination of ideas from this body of work, including models for melodies and drum patterns using multi-layer LSTMs with the addition of attention for better capturing long-range dependencies. A typical interaction for this type of model is to extend a priming sequence, similar to what has been done in the past with Markov chains. Since the base models are not conditioned by chord, key, or style, the primer is teacher-forced into the LSTM to set its state before

⁸ Hochreiter and Schmidhuber.

sampling begins. By training on a wide variety of music, the models avoid collapsing to a single style, which enables the user to effectively control the output by conditioning it with their primer. We have additionally trained “ImprovRNN” models that accept a chord sequence as a conditioning signal, which is supplied to the LSTM as a side input. This allows the user to further guide generation based on a chord progression of their choosing.⁹

In short, its use in music composition has been a culmination of prior ideas, improving upon issues and resulting in melodic or rhythmic content due to patterns it trains on. The use also ties to research that reflects problem-solving for compositional matters that arise regarding creativity, particularly for the issues of musical continuance and the models that connect to that issue.

Magenta

More specifically, Magenta.js is a set of tools in an open-source library, particularly for abstracting technical details so that developers can create new interfaces to generative models.¹⁰ It is a model that developers, composers, and researchers can easily use. Therefore, it aims to be a compositional tool of the future due to its community-centered approach, bridging the gap between disciplines and applications. Previously, the unique path to generative music had not been something easily accessible to all. This project also allows users to comprehend a high-level application programming interface (API) abstracted and straightforward enough. For the creation of the new method that is Magenta.js, Roberts describes:

New methods for modeling musical scores, often based on deep learning, have made it possible to automatically generate ever more convincing compositions. However, these models are often not accessible enough for artists to easily play and experiment with on their own terms. Application developers are already imagining ways to apply their design expertise to this new class of AI technologies but often lack a sufficient background in machine learning. Magenta.js is a new open source library with a simple JavaScript API intended to bridge this gap by abstracting away technical details, making it easier than ever for app developers to create new interfaces to generative models. Furthermore, because it is easily extensible, we hope that Magenta.js can foster a connection between the broader research community and creative developers through contributions from both groups. Finally, Magenta.js will open up the possibility for a new type of compositional tool that adapts to user preferences and behaviors in real-time. Code and documentation are available online at <https://goo.gl/magenta/js>.¹¹

⁹ Adam Roberts et al., “Magenta Studio: Augmenting Creativity with Deep Learning in Ableton Live,” in *Proceedings of the International Workshop on Musical Metacreation (MUME)*, 2019, http://musicalmetacreation.org/buddydrive/file/mume_2019_paper_2/.

¹⁰ Adam Roberts, Curtis Hawthorne, and Ian Simon, “Magenta.js: A JavaScript API for Augmenting Creativity with Deep Learning,” in *Joint Workshop on Machine Learning for Music (ICML)*, 2018. 1.

¹¹ Roberts, Hawthorne, and Simon.

Magenta is the base on which my compositional models live within. Africanfuturism needs a compositional method and motive that endorses a community-centered approach because it requires AI generation and technical procedure.

TensorFlow

TensorFlow is an accelerated framework that makes complex AI training within Python possible through a JavaScript API.¹² It also makes it possible to do in a web browser or desktop. While Magenta.js provides the API to a creative developer, it would be useless if AI training could not be done fast enough. In short, it allows for a graphic processing unit (GPU) to assist with the training of an AI. The deeply connected state of frenetic flow related to the mathematical sight of Binti also influences the creation of the AI, representing computation at a synaptic level. Dataflow is key to TensorFlow, as Martin Abadi and other researchers describe:

TensorFlow uses a unified dataflow graph to represent both the computation in an algorithm and the state on which the algorithm operates. We draw inspiration from the high-level programming models of dataflow systems and the low-level efficiency of parameter servers. Unlike traditional dataflow systems, in which graph vertices represent functional computation on immutable data, TensorFlow allows vertices to represent computations that own or update mutable state. Edges carry tensors (multi-dimensional arrays) between nodes, and TensorFlow transparently inserts the appropriate communication between distributed subcomputations.¹³

Tensors are what allow for the quick training of the AI. In the creation of TensorFlow, the researchers also focus on neural network training as a challenging systems problem and show the extensibility of the program to evaluate the efficiency and scalability of the software.¹⁴

The AI-generated music is then arranged using a combination of Ableton Live, MaxScore, and MuseScore, enabling the editing of MIDI in real-time, comprehensive yet decisive audio manipulation, and an aesthetic realization of futurity from Africanfuturism through the creative process.

Ableton Live is a digital audio workstation (DAW) that can interact with Virtual Studio Technology (VST) plug-ins written in C++ or a particular object-oriented programming language Max. Live is speedy, flowing, and adaptable software for music creation and performance. It comes with effects, instruments, sounds, and innovative features—all you need to make any music. Create in a traditional linear arrangement, or improvise without the constraints of a timeline in Live’s Session View. Move freely between musical elements and play with ideas without stopping the music and breaking your flow. On the website, the creators of Ableton Live advocate that its Session View can “freely mix and match musical ideas without the constraints

¹² Martin Abadi et al., “TensorFlow: A System for Large-Scale Machine Learning,” in *12th USENIX Symposium on Operating Systems Design and Implementation (OSDI 16)*, 2016, 265–83, <https://www.usenix.org/system/files/conference/osdi16/osdi16-abadi.pdf>. 265.

¹³ Abadi et al.

¹⁴ Abadi et al.

of a timeline. Getting ideas down is lightning fast, and it’s the ideal place for improvisation. You can play MIDI and audio loops of different lengths in any combination, without ever stopping the music.”¹⁵

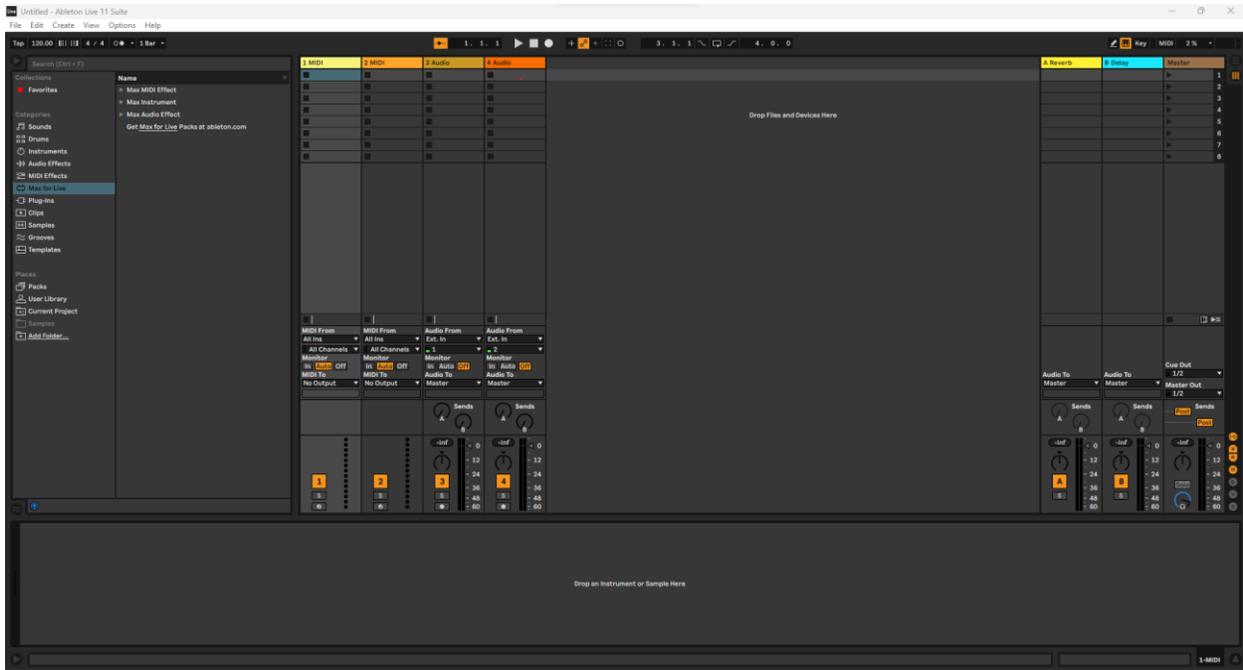


Figure 4

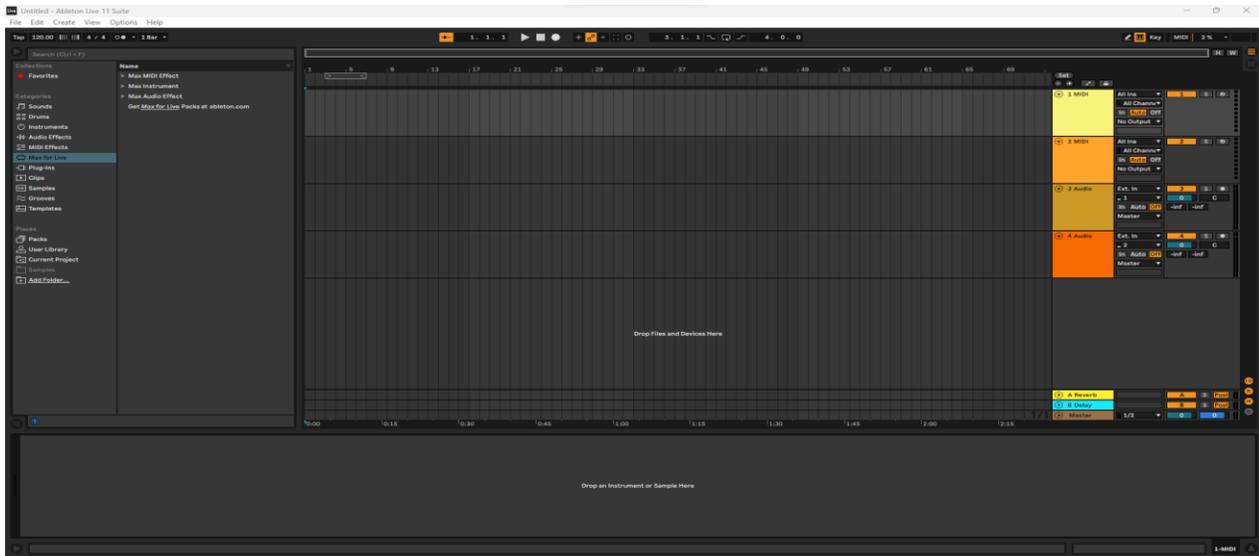


Figure 5

I am overcoming the limiting constraints of laying out a piece in a conventional Western music fashion. In conjunction with AI, the Session View layout the music in an Africanfuturist

¹⁵ “Ableton Live | Ableton,” accessed April 17, 2022, <https://www.ableton.com/en/live/what-is-live/>.

way through freedom and constant connection with the musical elements. Figure 4 shows the Clip View, and Figure 5 shows the Session View.

MaxScore is one of the tools that guide the development of the music in Ableton Live, created by Nick Didkovsky and Georg Hajdu. MaxScore allows for standard western music notation in MaxMSP. You can also populate a score with notes, query note properties, transform notes, play a score through Max/MSP, and export scores.¹⁶ LiveScore is an abstraction made to run in Ableton Live.

LiveScore is a visual notation environment for Live based on MaxScore. It thoroughly integrates into Live via the API provided by Max and allows the transcription and editing of Live MIDI clips. There are two Live devices:

LiveScore.Viewer which displays, for each track, the content of a selected MIDI clip in standard music notation. It also allows simple editing via **LiveScore.Editor**, which is the actual music editor. The LiveScore.Editor device has a graphical user interface that offers several convenient tools: intelligent transcription with key and clef finder, a percussion map, a set of menus and palettes for easy navigation, and interactive editing microtonal notation and playback via **LiveScore** devices.¹⁷

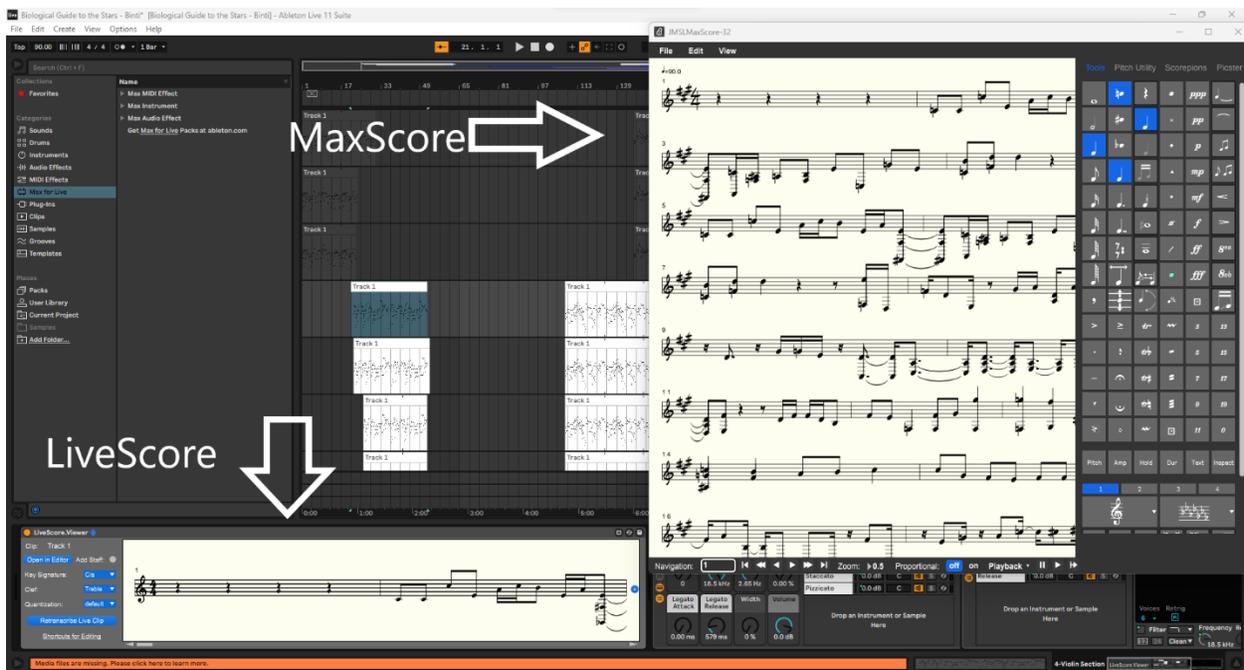


Figure 6

LiveScore in Ableton Live can help a composer or instrumentalist play and get a sense of the music at hand while arranging. Therefore, it assists with a dual perspective in musical

¹⁶ Nick; Hajdu Didkovsky, “MAXSCORE: MUSIC NOTATION IN MAX/MSP,” *International Computer Music Conference Proceedings* 2008 (August 2008), <http://hdl.handle.net/2027/spo.bbp2372.2008.034>. 1.

¹⁷ Georg Hajdu and Nick Didkovsky, “Maxscore - Current State of the Art,” January 1, 2012, 156–62. 156.

creation, one of a futurist perspective while also having a western music notation view. Figure 6 gives both MaxScore and LiveScore as tools for composition.

MuseScore is music notation software to create quality musical scores in a virtual environment. The music input process to Western music notation places the music in a format and orchestration comprehensible and learnable for students in any atmosphere. Figure 7 below shows the environment and its extensive capability. I use it to arrange the MIDI from Ableton Live after laying down the music from the clip view.

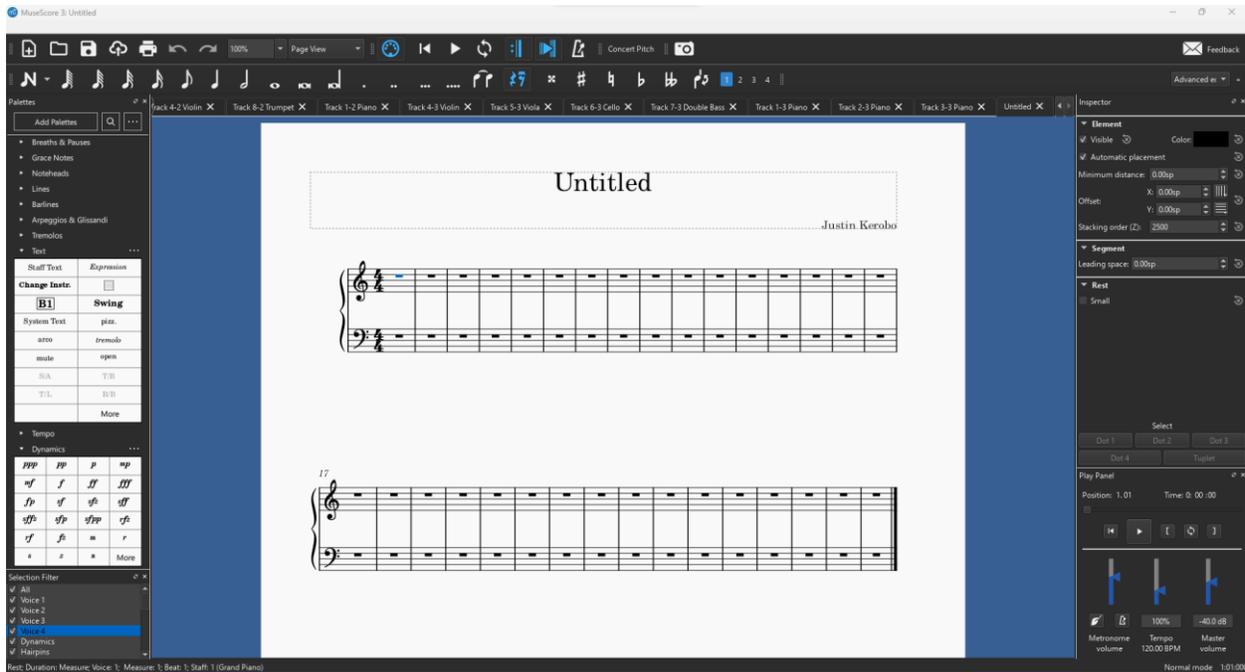


Figure 7

Binti

The novel *Binti* by Nnedi Okorafor is set in a technologically and socially advanced future. It tells the story of Binti, a brilliant and rebellious young woman destined to lead her community on Earth. But when she gets into the most prestigious academy in the galaxy, Oozma University, she chooses a different path and, rejecting her family's wishes, leaves her community behind in favor of the starry skies and the course of knowledge.¹⁸

The three factions introduced in *Binti* consist of the Himba, Khoush, and Meduse and are used to musically categorize three sets of AI-trained music data. The MIDI files used for training the AI in the music represent various artists, spanning multiple canons. Himba uses Jazz MIDI

¹⁸ Bettina Burger, "Math and Magic: Nnedi Okorafor's *Binti* Trilogy and Its Challenge to the Dominance of Western Science in Science Fiction," *Critical Studies in Media Communication* 37, no. 4 (October 2020): 364–77, <https://doi.org/10.1080/15295036.2020.1820540>.

files (Himba Filenames)¹⁹, Khoush uses a comprehensive classical canon (Khoush Filenames)²⁰, and Meduse uses a subset of the classical canon, particularly Romantic composers (Meduse Filenames)²¹. The files ultimately matter, but the starting point or primer MIDI might contribute to unique experiments when continuing a personally written phrase or an entirely new generation.

Dark-skinned and desert people, the Himba are primarily given natural gifts with currents. In particular, Binti comes from a family of *Bitolus*. She and her family know actual deep mathematics and can control their current; they master systems. The Himba are also master harmonizers, and they create astrolabes, which everyone in the galaxy uses for connection. Figure 8 below shows an example of a generated Himba AI MIDI file.

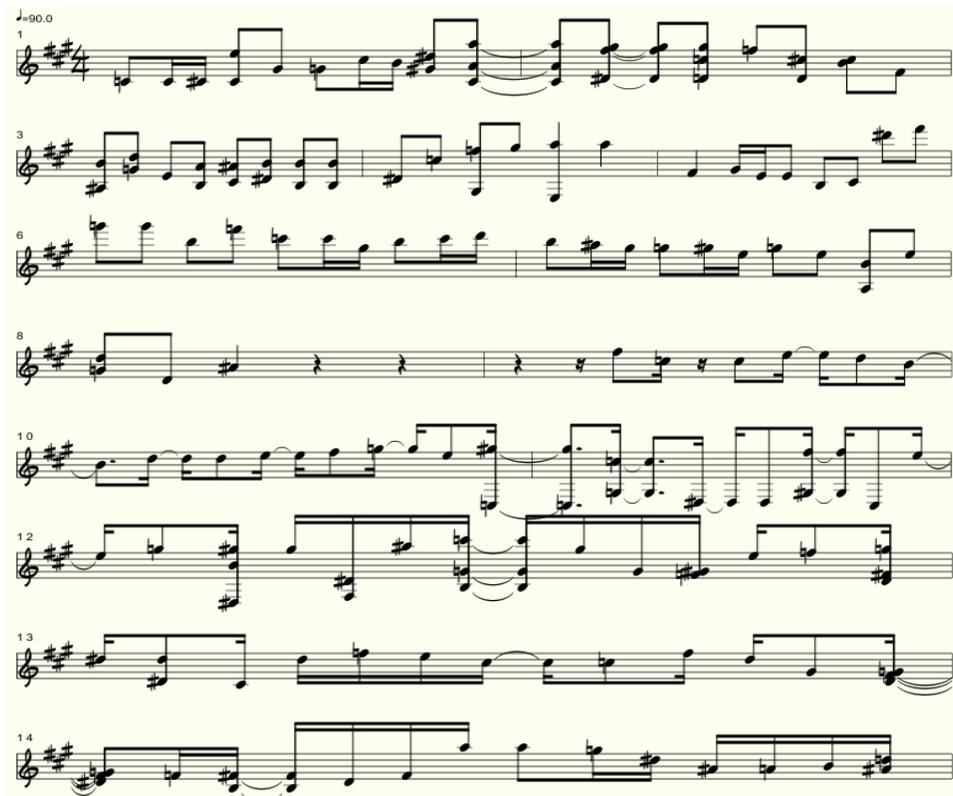


Figure 8

In this world, mathematical equations are a synaptic model that the most gifted beings can readily access, called “treeing.” Binti uses this in the book to calm herself down, find answers in deep meditation, and connect with a higher understanding of the world around them. Treeing applies as mathematical sight and the clip-based activation in which I lay the tracks down in Ableton Live for transfer to standard Western music notation in MuseScore.

¹⁹ See Appendix 1: Himba Filenames

²⁰ See Appendix 2: Khoush Filenames

²¹ See Appendix 3: Meduse Filenames

The Khoush, in contrast, aren't readily described in clear terms as for their being. We know them as not the dark-skinned Himba but as likely beings much paler compared to the majority of people in the traditional galaxy. We know that they are warring people who have a war against the Meduse, a jellyfish being. The conflict sets the main drive for the entire first book and the retribution around that. It is also inferred that they are the majority being of the galaxy, to which there are plenty of examples of discrimination, whether in ignorance or intent against other beings. Figure 9 below shows an example of a generated Khoush AI MIDI file.



Figure 9

The third faction, Meduse, are beings that move like water, they worship water as a god, and their ancestors came from the water long ago. They have tentacles that they use as appendices and breath gases that they emanate. They also float as well, mainly using the gas emanated. Figure 10 below shows an example of a generated Meduse AI MIDI file.

Figure 10

A compilation of music representing the three factions, *Biological Guide to The Stars* is a work whose basis is in no root harmonically and moves towards complete chaos. While the resulting MIDI files are generated using AI, there are final musical editing decisions the co-

composer/arranger must make. These edits are crucial to the piece; instruments, doublings, grouping, and counterpoint are all decided by the co-composer/arranger of the work. I can also edit the melodies in real-time to correct any issues that may have occurred with instrument groupings, usually octave transpositions, to correct an AI-trained musical passage to lie within an instrument's playable range.

The resulting AI-trained MIDI files are from Magenta.js, Melody RNN, and the Polyphony RNN. The AI training was done with the following process in which the factors and AI changed per faction and group. The following shows and explains the python code for one faction, but if you replace Himba with Khoush or Meduse, it would be an example of how you could train an AI:

1. Convert MIDI sequences to NoteSequences (Magenta's way of listening to music): type in the python terminal (the same one used to install Magenta, etc.) the following `himba_rnn_convertmidi.py`

- a. `python magenta/scripts/convert_dir_to_note_sequences.py`
`--input_dir=C:\Users\justi\github\GuideToTheStars`
`Binti\Magenta>MainTestData\Himba\JazzMidi\`
`--output_file='HIMBAnotesequences.tfrecord'`
`--log=INFO`

Scripts are a subfolder that contains python files. The particular one transforms the songs in the `input_dir` (in the MIDI format) into a form that Magenta can "listen" to located in the `output_dir`.

2. Convert the sequences from the former step into testing and training dataset. `himba_rnn_pretrain_and_train.py`

- a. `python magenta/models/melody_rnn/melody_rnn_create_dataset.py`
`--config=attention_rnn`
`--input=C:\Users\justi\github\GuideToTheStars-`
`Binti\Magenta\HIMBAnotesequences.tfrecord`
`--output_dir=C:\Users\justi\github\GuideToTheStars-`
`Binti\Magenta>MainTestData\Himba\JazzMidi\HIMBAseqex\`
`--eval_ratio=0.1`

There are two options for `--config`. One is an attention RNN, and the other is a lookback RNN. The attention RNN are usually better because they look forward (one input from the next step) and backward. Meanwhile, lookback only looks backward. The `--input` is the tfrecord file created at the former step. The `--output_dir` is the folder where you want the training and testing datasets. The `--eval_ratio=0.1` means, in this case, that 10% will be in the testing dataset.

3. Train the RNN on the training tfrecord dataset from the former step.

`himba_rnn_train_on_training_tfrecord.py`

- a. `python magenta/magenta/models/melody_rnn/melody_rnn_train.py`
`--config=attention_rnn`

```

--run_dir=C:\Users\justi\github\GuideToTheStars-
Binti\magenta\MainTestData\Himba\JazzMidi\himba_rnn
--sequence_example_file=C:\Users\justi\github\GuideToTheStars-
Binti\magenta\MainTestData\Himba\JazzMidi\HIMBAseqex\training_melodi
es.tfrecord
--hparams="batch_size=64,rnn_layer_sizes=[64,64]"
--num_training_steps=20000

```

The `--config` has to be the same as the former step, the `--run_dir` has to be created manually by you, and the `--sequence_example_file` has to point to the training dataset created during the former step. The `--hparams` contain the Neural Network parameters, NN: in this case. The `batch_size` is the number of samples propagated through the NN for learning. The `rnn_layer_sizes=[64,64]` means that the NN has two layers with sixty-four nodes each. For example, you can have three layers with thirty-two nodes each, and you would write `rnn_layer_sizes=[32,32,32]`. Or maybe it is better to first start with one that is smaller and trains faster: two layers of sixteen nodes: `--hparams="batch_size=16,rnn_layer_sizes=[16,16]"`

4. You can evaluate the NN (Neural Network) on the testing dataset (eval as it is named automatically by Magenta)

```
himba_rnn_evaluate_nn_on_testing_dataset.py
```

- a.

```
python magenta/magenta/models/melody_rnn/melody_rnn_train.py
--config=attention_rnn
--run_dir=C:\Users\justi\github\GuideToTheStars-
Binti\magenta\MainTestData\Himba\JazzMidi\himba_rnn
--sequence_example_file=C:\Users\justi\github\GuideToTheStars-
Binti\magenta\MainTestData\Himba\JazzMidi\HIMBAseqex\eval_melodies.tf
record
--hparams="batch_size=64,rnn_layer_sizes=[64,64]"
--num_training_steps=20000 --eval
```

The parameters are the same as the previous step except `--sequence_example_file`, which points to the testing dataset, and there is an `--eval` at the very end.

5. You can create plots of loss and accuracy using tensorboard:

```
himba_rnn_tensorboard_graph.py
tensorboard --logdir=C:/Users/justi/github/GuideToTheStars-
Binti/magenta/MainTestData/Himba/JazzMidi/himba_rnn/
```

You can open a new tab in the browser and access them at the following link:
localhost:6006

6. You can generate a new song from that data:

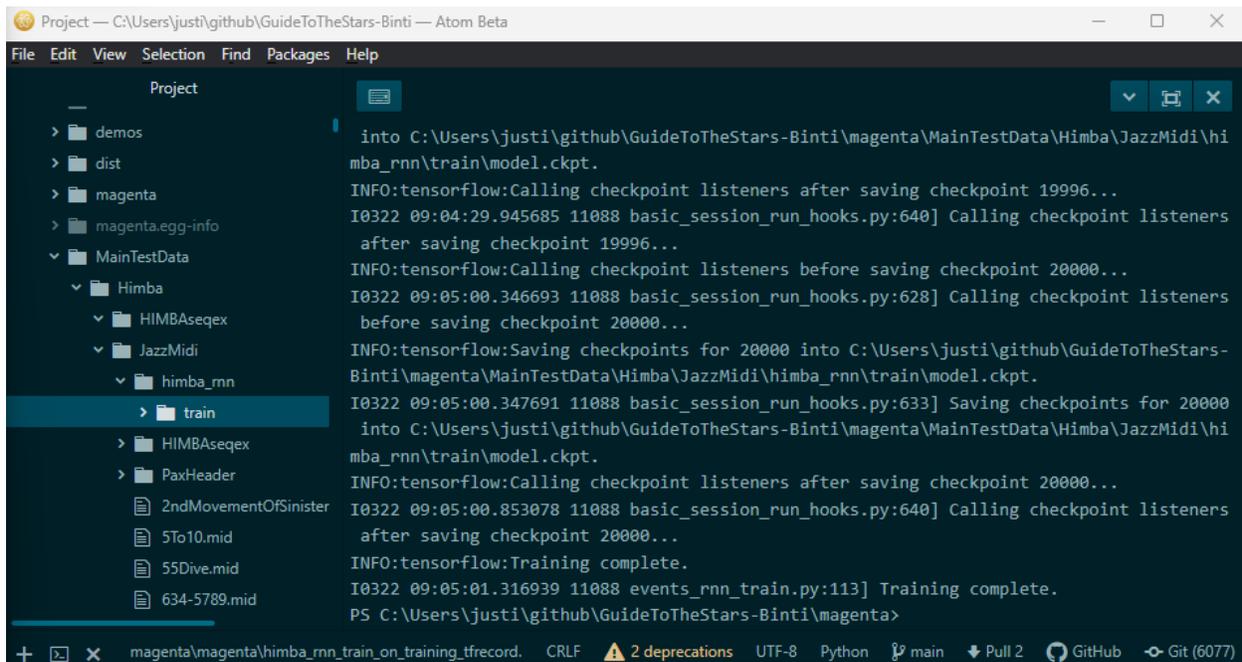
```
himba_rnn_songs.py
a. python magenta/models/melody_rnn/melody_rnn_generate.py
--config=attention_rnn
```

```

--run_dir=C:\Users\justi\github\GuideToTheStars-
Binti\magenta\MainTestData\Himba\JazzMidi\himba_rnn\
--output_dir=C:\Users\justi\github\GuideToTheStars-
Binti\magenta\MainTestData\Himba\JazzMidi\himba_rnn\himba_attention_64
64_batch64_run1
--num_outputs=10 --num_steps=256
--hparams="batch_size=64,rnn_layer_sizes=[64,64]" --primer_melody="[60]"

```

The MIDI files generated are an example of that data and how it can be used within Python for training of an AI with ease. Figure 11 below is an example of the MIDI training complete in the Windows Terminal and Atom, a code editor.



The screenshot shows the Atom code editor interface. On the left, a file explorer shows the project structure: Project > MainTestData > Himba > JazzMidi > himba_rnn > train. The main editor area displays a terminal window with the following output:

```

into C:\Users\justi\github\GuideToTheStars-Binti\magenta\MainTestData\Himba\JazzMidi\hi
mba_rnn\train\model.ckpt.
INFO:tensorflow:Calling checkpoint listeners after saving checkpoint 19996...
I0322 09:04:29.945685 11088 basic_session_run_hooks.py:640] Calling checkpoint listeners
after saving checkpoint 19996...
INFO:tensorflow:Calling checkpoint listeners before saving checkpoint 20000...
I0322 09:05:00.346693 11088 basic_session_run_hooks.py:628] Calling checkpoint listeners
before saving checkpoint 20000...
INFO:tensorflow:Saving checkpoints for 20000 into C:\Users\justi\github\GuideToTheStars-
Binti\magenta\MainTestData\Himba\JazzMidi\himba_rnn\train\model.ckpt.
I0322 09:05:00.347691 11088 basic_session_run_hooks.py:633] Saving checkpoints for 20000
into C:\Users\justi\github\GuideToTheStars-Binti\magenta\MainTestData\Himba\JazzMidi\hi
mba_rnn\train\model.ckpt.
INFO:tensorflow:Calling checkpoint listeners after saving checkpoint 20000...
I0322 09:05:00.853078 11088 basic_session_run_hooks.py:640] Calling checkpoint listeners
after saving checkpoint 20000...
INFO:tensorflow:Training complete.
I0322 09:05:01.316939 11088 events_rnn_train.py:113] Training complete.
PS C:\Users\justi\github\GuideToTheStars-Binti\magenta>

```

Figure 11

A large part of the compositional process deals with the radical act of essentially reducing the classical canon to hundreds of MIDI files. A depolarizing effect and the deemphasis of “classical greatness” occur due to the numerosity and general ambiguity when dealing with hundreds of MIDI files. This brilliantly creates a clear demonstration of “other” in a revolutionary context, adding this new compositional process indeed seeks its own identity (and dis-identity) from such older models.

Aesthetic musical characteristics unique to *Biological Guide To The Stars* are in its creation. The process centers around the three factions, Himba is instrumentally assigned to keyboard instruments, Khoush is instrumentally assigned to strings, and Meduse is given to brass and woodwind instruments. The work exemplifies Africanfuturist fiction in mind during the creation of the piece, thoughts of an African or “other” future in the design, and multiple conflicting melodic lines occurring at once, moving narrative and rhythm as the melody for vivid

storytelling purposes. The work also deemphasizes the West and the perceived greatness of the classical canon. It is, therefore, an Africanfuturist work and a result of that process.

Conclusion

In conclusion, the result, *Biological Guide To The Stars*, is a work that is sonically scored for machine-learning study when looking at melody as a drive for narrative motion from an Africanfuturist perspective. Its tonality and harmonics are unclear or undefined, and it does not fit one style or genre. It maps to Africanfuturist thought through mathematical sight. Treeing applies as mathematical sight and the clip-based activation in which I lay the tracks down in Ableton Live for transfer to standard Western music notation in MuseScore.

The result that is the work is not a final point in the search for Africanfuturist means or basis in musical characteristics; it is just the beginning. More perspectives and research points can consider AI-generated music directly: what MIDI files am I using to train the AI? What are the instrumental boundaries I would like to set? Do you want to start all melodies with a starting note or a MIDI file? The questions can delve into more profound questions on groups of instruments or unique folk songs in which one may hope to Africanfuturism enactable from traditional roots in musical bounds. It follows along the lines of other composers like Georg Hajdu and Horacio Vaggione, creating along the lines of the *dispositif* and a culmination of computer music or assisted works whose primary goal is actualization.

While some may argue that the resulting mix sounds like Western music, the guidelines determining its creation allow for freedom from those conceptions when choosing a genre or type. Its ideology is to voice mechanistic “otherings” unheard, which remains seen as an Africanfuturist future and musical characteristic and process.

Appendix 1: Himba Filenames

2ndMovementOfSinisterFootwear.mid	ALittleMarkMusic.mid	AnotherDimension.mid	BadGirlDolly.mid	BiteOfTheMosquito.mid
55Dive.mid	AlJolsonMedley.mid	AnyWayYouWantIt.mid	BalladForKay.mid	BitterMoon.mid
5To10.mid	AllBehindUsNow.mid	Apostrophe.mid	BandofGold.mid	BlackDiamond.mid
634-5789.mid	AllBlues.mid	AprilinParis.mid	BangBang(MyBabyShotMeDown).mid	BlackFriday.mid
914.mid	AllFourSeasons.mid	Aquabot.mid	Barfbag.mid	BlackMarket.mid
ABC.mid	AllIAskOfYou.mid	Aquarius.mid	BeautifulGirl.mid	BlackMountainRag.mid
ACertainSmile.mid	AllIDoIsDreamOfYou.mid	ARemarkYouMade.mid	Bebop.mid	BlackPage.mid
ACrush.mid	AllIEverNeedIsYou.mid	AroundTheWorld.mid	BeforeThePardadePassesMeBy.mid	Blows.mid
Adayinalifeofafacol.mid	AllMyLife.mid	Asayake.mid	BeGoodToYourself.mid	BlueAngel.mid
Adventage.mid	AllMyTomorrows.mid	Aspen.mid	BehindClosedDoors.mid	BlueBayou.mid
AffairInSanMiguel.mid	AllOfMe.mid	Atavachron.mid	BeneathADesertMoon.mid	BlueberryHill.mid
AFifthofBeethoven.mid	AllOfYou.mid	AThousandYears.mid	Berlin.mid	BlueInGreen.mid
Afoggydayilondontown.mid	AllOrNothingAtAll.mid	ATimeForUs.mid	Bernadette.mid	Blueocean.mid
AfterTheLoveHasGone.mid	AllOverYou.mid	AtLast.mid	BeStillMyBeatingHeart.mid	BlueRoom.mid
AfterTheRainHasFallen.mid	Allthethingsyouare.mid	AutumnInNewYork.mid	BetterDaysAhead.mid	Bluesette.mid
AgeOfAquarius.mid	AllTheWay.mid	AutumnLeaves(LesFeuillesMortes).mid	Bewitched.mid	Bluette.mid
Aintchagottired.mid	AllThisTime.mid	AutumnLeaves.mid	Biaxident.mid	BobbyBrown.mid
AintNothingLikeRealThingBaby.mid	AllThumb.mid	Avalon.mid	BibonoAozora.mid	Bodhisattva.mid
AintNoWomanLikeTheOneIGot.mid	Alone.mid	AvenidaDelMar.mid	BigSky.mid	BoogieDown.mid
Aja.mid	AloneTogether.mid	AWomansWorth.mid	BigSurMoon.mid	BoogieOnRaggaeWomen.mid
AKindOfTherapy.mid	Alphonso.mid	BabyComeToMe.mid	BigTime.mid	BoogieWonderland.mid
ALittleBitofBlues.mid	Amazinggrace.mid	BabyINeedYourLovin.mid	BigYellowTaxi.mid	BothSidesNow.mid
ALittleIsEnough.mid	Andy.mid	BabylonSisters.mid	BingeAndGrab.mid	BrandNewDay.mid
	Angela.mid	BackhomeagaininIndiana.mid	BirdLand.mid	BraveNewWorld.mid
	AngelEyes.mid	BackToBlack.mid	BirthOfTheBlues.mid	Breathless.mid
	AnimateInanimate.mid			BreezeAndI.mid
	AnotherDay.mid			Breezin.mid
				BrilliantBlues.mid

BrownEyedGirl.mid	Cherish.mid	CountryDoctor.mid	DontDreamOfAnybodyButMe.mid	Emily.mid
BrownShoesDontMakeIt.mid	CherishTheDay.mid	Crazylittlethingcalllove.mid	DontEatTheYellowSnow.mid	EmptyRooms.mid
BuglersDream.mid	CherryPie.mid	CrazyLove.mid	DontknowMuch.mid	EndOfTheGame.mid
BukasNaLangKitaMamahalin.mid	ChhaideuTimi.mid	Criminal.mid	DontRainOnMyParade.mid	EndoftheInnocence.mid
Bumblebee.mid	ChickenFeed.mid	CruiseControl.mid	DontStopBelieving.mid	EnglishManInNewYork.mid
ButBeautiful.mid	Children.mid	Curve.mid	DontTakeYourLoveFromMe.mid	Entertainer.mid
ButNotForMe.mid	ChildrenSay.mid	CurvesAhead.mid	DontWalkAwayInTheMusic.mid	EnterTheDragon.mid
ByMySide.mid	ChinaDoll.mid	DaddyDontLiveInThatNewYorkCityNoMore.mid	DontYouWorryAboutaThing.mid	Epilogue.mid
ByYourSide.mid	Chinatawn.mid	DamageControl.mid	DreamALittleDream.mid	EtudeInAMinorOpus10No2.mid
Cabaret.mid	ChipBlue.mid	DancingOnTheCeiling.mid	DreamaLittleDreamofMe.mid	Evergreen.mid
CachitoMioChacha.mid	Chromazone.mid	DarnThatDream.mid	Dreamlover.mid	EveryBreatheYouTake.mid
CannedHeat.mid	CindyOhCindy.mid	DayanaEspañolversion.mid	DreamOfSirens.mid	EveryLittleKiss.mid
CantGetUsedToLosingYou.mid	CitygateRumble.mid	Daydream.mid	Dreams.mid	EverySummerNight.mid
CantHelpMyself.mid	CityOfGoldLicks.mid	Dazzling.mid	DriveIn.mid	Everything.mid
CantilopeIsland.mid	CityofNewOrleans.mid	DeaconBlues.mid	DuneTune.mid	Exercise.mid
CantTameTheLion.mid	ClassicalGas.mid	DeadMansRope.mid	Dying.mid	Exodus.mid
Caravan.mid	CleanSweep.mid	Decoy.mid	DyingYoung.mid	EyesOfMind.mid
Cascade.mid	ClearAsTheDark.mid	DesertRose.mid	EarlyA.M.Attitude.mid	Fable.mid
Celebration.mid	CloseToYou.mid	Destiny.mid	EastoftheSun.mid	FaceDancesPart2.mid
CentralParkWest.mid	ColdDayInHell.mid	DheraiDheraiAauncha.mid	EastSt.LouisToodleOh.mid	Faithfully.mid
Cestmagnifique.mid	ColorsOfTheWindow.mid	Diana.mid	EasyToLove.mid	Faithfully2.mid
ChainOfFools.mid	comeflywithme.mid	Differentdums.mid	EbbTide.mid	Fallen.mid
Chameleon.mid	ConsiderMeGone.mid	DirtyLove.mid	Ebony&Ivory.mid	Fantasy.mid
ChancesAre.mid	ContinentalWay.mid	DizzyFingers.mid	EchidnasArf(OfYou).mid	FatherOblivion.mid
Charade.mid	CopperKettle.mid	DoItAgain.mid	EightyOne.mid	Feelings.mid
CharliePuth.mid	CosmicSquareDance.mid	DolphinDreams.mid	ElegantPeople.mid	FeelingThatWay.mid
Cheektocheek.mid	CountOnTheBlues.mid	Domino.mid		FeelsLikeHome.mid

FieldsOfGold.mid	GhostOfaChance.mid	HearOnMyOwn.mid	HowHighTheMoon.mid	IllSaySheDoes.mid
FilingGood.mid	GhostStory.mid	HeavenHelpUsAll.mid	HowSweetItIsToBeLovedByYou.mid	IllSeeYouInMyDreams.mid
FillHerUp.mid	GiantRobotLesson.mid	HeavyCloudsNoRain.mid	HowYaDoDat.mid	IllTakeManhattan.mid
FineBrownFrame.mid	GirlCantHelpIt.mid	HelloDolly.mid	HungryFreaksDaddy.mid	ILoveMyFriends.mid
FireontheCross.mid	GirlFromIpanema.mid	HelloMyBaby.mid	HurtSoBad.mid	ImAFoolToWantYou.mid
Flakes.mid	GiveItUp.mid	HelpMe.mid	I-5Binge.mid	Imagine.mid
FlyByNight.mid	GiveMeTheNight.mid	HeresThatRainyDayAgain.mid	IBelieve.mid	ImGettingSentimentalOverYou.mid
FlyMetotheMoon.mid	GlasgowKiss(Live).mid	HesMisstraKnow-it-all.mid	ICantGetStarted.mid	ImpossibleDream.mid
FM.mid	GlasgowKiss.mid	HeyNineteen.mid	ICantGiveYouAnythingButLove.mid	ImSoHappyICantStopCrying.mid
FoggyDayinLondonTown.mid	GodBlessTheChild.mid	HideAway.mid	IConcentrateOnYou.mid	Imsorry.mid
FoolsRushIn.mid	GoingBackHome.mid	HigherGround.mid	IfIAintGotYou.mid	IndianSummer.mid
Foreplay.mid	GoingHome.mid	Himbafilenames.txt	IfIEverLoseMyFaithInYou.mid	InLoveAgain.mid
ForHeavensSake.mid	GoldenLady.mid	HIMBApolypseqx	IfIHadYou.mid	InMyLife.mid
Foronceinmylife.mid	GoodbyeLook.mid	HIMBAseqex	IfYouLoveSomebodySetThemFree.mid	InMyWay.mid
FortressAroundYourHeart.mid	GoodEnough.mid	himba_polyrnn	IGetaKickOutOfYou.mid	InnerCityBlues.mid
Four.mid	GoodMorningHeartache.mid	himba_rnn	IGetaKickOutOfYou.mid	Inside.mid
Fragile.mid	GotToGetYouIntoMyLife.mid	HogBitchStomp.mid	IGY.mid	InsidePicking.mid
FreedomAtMidnight.mid	Guaranteed.mid	HoldOn.mid	IHungMyHead.mid	InTheDawn.mid
FreedoomOfSpeech.mid	Guilty.mid	HollowYears.mid	IJustCalledtoSayILoveYou.mid	InTheRain.mid
FreightTrain.mid	HahaHotel.mid	Hollywood.mid	IllBeAlrightWithoutYou.mid	IntotheMystic.mid
Fresh.mid	HappyBirthday.mid	Home.mid	IllBeDoggone.mid	IntroMusic(FromRockDiscipline).mid
FridayOnMyMind.mid	HappyDaysAreHereAgain.mid	HomeAtLast.mid	IllBeSeeingYou.mid	Invitation.mid
Funkytown.mid	HarborLights.mid	HotWater.mid	IllGetBy.mid	IShouldCare.mid
GabbyDance.mid	Haventmetyouyet.mid	Hourglass.mid	IllNeverSmileAgain.mid	IslandOfSouls.mid
Gemini.mid	Havona.mid	Howcanyoumendabrokenheart.mid		IsntSheLovely.mid
GetDownOnIt.mid	HeardItThroughTheGrapevine.mid	HowComeYouDontCallAnymore.mid		
GettinSentimentalOverYou.mid		HowDoYouKeepTheMusicPlaying.mid		

ItHadToBeYou. mid	JumpJiveAndWai l.mid	LastNightIDidnt GetToSleepAtAll .mid	Love.mid	Marie-Mai- Tutenfous.mid
ItMightBeYou.mi d	JumpMan.mid	Laura.mid	LoveandMarriage .mid	Masquerade.mid
ItsAllIntheGame. mid	JungiNishan.mid	LeavingMeNow. mid	LoveGame.mid	MasterBlaster.mi d
ItsNotforMeToSa y.mid	JungleBoogie.mi d	LeftHandWarmU p.mid	LoveInAPeaceful World.mid	Maxine.mid
ItsOnlyAPaperM oon.mid	JustAGame.mid	LesFeuillesMorte s.mid	LoveIsAllWeNee d.mid	Maybelle.mid
ItsOver.mid	JustAnotherDay. mid	LessonsInLove.m id	LoveIsALosingG ame.mid	MellowHombre. mid
ItsProbablyMe.m id	JustBecause.mid	Letmetryagain.mi d	LoveIsStrongerT hanJustice.mid	Memory.mid
ItssoeasytofallinL ove.mid	JustOneKiss.mid	LetMyLoveOpen TheDoor.mid	LoveIsStrongerT hanPride.mid	MerryChristmas Mr.Lawrence.mi d
ItWasAVeryGoo dYear.mid	JustTheSameWa y.mid	LetsGrooveTonig ht.mid	LoveIsTheSevent hWave.mid	MessageOfLove. mid
IveGotaCrushOn You.mid	Karma.mid	LetsMakeTheWa terTurnBlack.mid	LoveStory.mid	mid
IveGotTheWorld OnAString.mid	KidCharlemagne. mid	LetYourSoulBeY ourPilot.mid	LovinAllNightLo ng.mid	MidnightBlue.mi d
IveGotYouUnder MySkin.mid	Kilimanjaro.mid	Lights.mid	LovinTouchinSq ueezin.mid	Milestones.mid
IveHeardThatSon gBefore.mid	KillerFlaminBud dy.mid	LightYear.mid	LuckBeALady.m id	MissYouLikeCra zy.mid
IveNeverBeenIn LoveBefore.mid	KillingMeSoftly. mid	LilyWasHere.mid	MackTheKnife.m id	MisterSandman. mid
IWasBroughtTo MySenses.mid	KindredSpirits.mi d	LithiumSunset.mi d	MadAboutYou.m id	Misty.mid
IWish.mid	KingKongItself. mid	LittleSunflower. mid	MainStreetBreak down.mid	MoBetterBlues.m id
Iwontdance.mid	Kissingafool.mid	LittleWing.mid	MakeLove.mid	Moment.mid
JamaicanNights. mid	KissOffFire.mid	LocoInAcapulco 1.mid	MakingLove.mid	MonaLisa.mid
James.mid	KissofLife.mid	LocoInAcapulco 2.mid	MakinWhoopie. mid	Montana.mid
JasoGaraJeBhana .mid	KnocksMeOffMy Feet.mid	LonelyBoy(ImJu stA).mid	MandolinRain.mi d	Moondance.mid
JawsOfLife.mid	Koko.mid	LongRace.mid	ManhaDeCarnav al.mid	Moonlighting.mi d
JerrysBreakdown .mid	LaBelleDameSan sRegrets.mid	LookAtMe.mid	Manhattan.mid	MoonlightinVer mont.mid
JoAnna.mid	LadiesNight.mid	LookingUp.mid	MantaMeroNepal i.mid	MoonOverBourb onStreet.mid
Joshua.mid	Ladyisatramp.mi d	LookOutAnyWin dow.mid	Marie-Mai- Encoreunenuit.mi d	Moonriver.mid
Josie.mid	LadyLove.mid	LostWithoutYou. mid		Mordance.mid
JoyofLife.mid	LAigleNoir.mid			More.mid
	Lakai.mid			MoreThanYouKn ow.mid
	Lakes.mid			

Morning.mid	Nepali.mid	OneAndOne.mid	PaxHeader	RecordaMe.mid
MovingViolation.mid	NeverComingHome.mid	OneDay.mid	PeachesInRegalia.mid	RedSailsInTheSunset.mid
MrBojangles.mid	NeverFeltThisWay.mid	OneDayYoullBeSorry.mid	Peanuts.mid	ReelingInTheYears.mid
MrMelody.mid	NewFrontier.mid	OneForMyBaby.mid	PeepShowBinge.mid	Rehab.mid
MuffinMan.mid	NewPhunk.mid	OneMintJulep.mid	Peg.mid	Respect.mid
Music!Music!Music!.mid	NewStLeu.mid	OneSummerNightInBrasil.mid	People.mid	RestingPlace.mid
MusictoWatchGirlsby.mid	NewYorkNewYork.mid	OnlyTheYoung.mid	Petrucciesque.mid	RevengeWedge.mid
MuskratRamble.mid	NicenEasy.mid	OnTheCase.mid	Phantasm.mid	RibbonInTheSky.mid
MyCherieAmour.mid	NightandDay.mid	OpenArms.mid	PhaseDance.mid	Riderideride.mid
MyFathersShoes.mid	Nightfly.mid	OpenedTheDoor.mid	PictureOfYou.mid	RikkiDontLoseThatNumber.mid
MyFunnyValentine.mid	NightOfTheSlunk.mid	OrangeColoredSky.mid	PieceOfMyWish.mid	RioFunk.mid
MyGuitarWantsToKillYourMama.mid	NoOneInTheWorld.mid	OrdinaryLove.mid	PijadaaKoSuga.mid	Rise.mid
MyMammy.mid	NoOrdinaryLove.mid	OurLoveIsHereToStay.mid	PinjadaKoSuga.mid	River.mid
MyOldFlame.mid	NothingBoutMe.mid	OutOfReach.mid	PinkCadalac.mid	RiverRunsLow.mid
MyOldSchool.mid	NothingCanComeBetweenUs.mid	Overjoy.mid	PinkCadillac.mid	RoadWarriors.mid
MyPrayer.mid	NothingGonnaChangeMyLove.mid	OverTheRainbow.mid	Pinocchio.mid	RockA-ByeMyBaby.mid
MysticDreamExercise.mid	NumbNubs.mid	OverTheWaves.mid	PlayingForTime.mid	RockDiscipline.mid
MyWay.mid	NutSundae.mid	PackardGoose.mid	PolkaDotsandMonbeans.mid	RockIt.mid
Nancy.mid	NyStateOfMind.mid	PahiloJunima.mid	PowerRangersTheme.mid	RockyTop.mid
NanookRubsIt.mid	OchiChornya.mid	Paladium.mid	PrettyWoman.mid	RomanticWarrior.mid
NanookSuite.mid	OhByJingoOhByGee.mid	ParadigmShift.mid	PretzalLogic.mid	RoofGarden.mid
Nardis.mid	OhLadyBeGood.mid	Paradise.mid	PureAndEasy.mid	RoughBoys.mid
NativeSonsOfADistantLand.mid	OhSherrie.mid	Parelima.mid	PutYourHandOnMyShoulder.mid	RoundMidnight.mid
NaturalElements.mid	OldPlayground.mid	ParisienneWalkways.mid	PutYourHeadOnMyShoulder.mid	RubyBaby.mid
NearnessOfYou.mid	OnaClearDay.mid	PartTimeLover.mid	RaptureofLove.mid	RubyTuesday.mid
Necrominicon(Epilogue).mid	OnBroadway.mid	PassingThrough.mid	Rawhide.mid	Rumble.mid
	onceuponatimein space.mid		ReachOut.mid	RunningInTheFamily.mid
				Russians.mid

SaintAgnesandTheBlessingTrain.mid	SevenStepstoHeaven.mid	SmokeGetsInYourEyes.mid	StanderontheMountain.mid	SundayMorning.mid
SaintAugustine.mid	SexualHealing.mid	SmoothOperator.mid	StandingInTheLight.mid	Sunshine.mid
SaltyDog.mid	Shadowboxer.mid	Solar.mid	StandingInTheShadowOfLove.mid	Superstitions.mid
SalutetoNelsonRiddle.mid	ShapeOfMyHeart.mid	SomeoneThatIUsedToLove.mid	Starchild.mid	Swanee.mid
Sambhodan.mid	Shecalledmebaby.mid	SomeoneToWatchOverMe.mid	Stardust.mid	Sway.mid
Sambodhan.mid	ShelteringSky.mid	SomethingAboutYou.mid	StateOfGrace.mid	Swear.mid
SameOldSong.mid	ShesFunnyThatWay.mid	SomethingStupid.mid	StayAwhile.mid	SweetAboutMe.mid
SamjhiBaschhu.mid	ShesTooGoodForMe.mid	SomethingTheBoysaid.mid	StillGotTheBlues.mid	SweetAndSimple.mid
SaraKhusi.mid	ShiningStar.mid	Somewhere.mid	StLouisBlues.mid	SweetestTaboo.mid
SatinDoll.mid	ShowGoesOn.mid	SomewhereMyLove.mid	StolenCar(TakeMeDancing).mid	SweetGeorgia.mid
SaveTheBestForLast.mid	ShutUpNPlayYerGuitarSomeMore.mid	SomewhereOutThere.mid	StonedSoulPicnic.mid	SweetLove.mid
SavetheLastDanceforme.mid	Sidewalk.mid	SomewhereOverTheSlaughterhouse.mid	StoneInLove.mid	TakeALook.mid
Saxy.mid	SiempreHayEsperanza.mid	Songbird.mid	StoneyEnd.mid	TakeFive.mid
ScoopFromTheCooop.mid	SignedSealedDelivered.mid	SongForBilao.mid	StopLookListenToYourHeart.mid	TakeTheAtrain.mid
SecondMarriage.mid	Silence.mid	SongIsYou.mid	StoriesOfThePainedDesert.mid	TalkoftheTown.mid
SecretLove.mid	SilentNight.mid	SoulCages.mid	StoryOfTheBlues.mid	Tarantelle.mid
SeeYouWhenIGetThere.mid	Silhouette.mid	SoulMates.mid	StraightToMyHeart.mid	TaxidermyLoaf.mid
SendHerMyLove.mid	SinceIDontHaveYou.mid	SoWhat.mid	StrangersInTheNight.mid	Teentown.mid
SendYourLove.mid	SinceIFellForYou.mid	Spain.mid	Struttin.mid	TellHim.mid
Sentimental.mid	SingASong.mid	SpeedAndTechnique.mid	StTropez.mid	Thatllbetheday.mid
SentimentalMood.mid	SirDuke.mid	SpiderFingers.mid	StupidCupid.mid	ThatOldFeeling.mid
SeparateWays.mid	SisireJhai.mid	Spiderman.mid	SugarloafExpress.mid	ThatsAll.mid
SeparateWays2.mid	SisterMoon.mid	SpinningWheel.mid	SuicideIsPainless.mid	ThatsAllGreatAmericanSongbook.mid
September.mid	SleepDirt(BlackNapkins).mid	St.LouisBlues.mid	Summertime.mid	ThatsLife.mid
SeptemberSong.mid	SleepToDream.mid	StAlfonzosPancakeBreakfast.mid	SummerWind.mid	ThatsTheWayoftheWorld.mid
SevenDays.mid		StandByMe.mid	SummerWine.mid	ThatsWhatFriendsAreFor.mid
				TheBlueChipBop.mid

TheCloserIGetToYou.mid	TheWildWildSea.mid	TyoRatko.mid	WelcomeToBucketheadland.mid	WhereIsTheLove.mid
TheDeathlessHorsie.mid	TheyCantTakeAwayFromMe.mid	UncleAl.mid	WelcomeToTheStJamesClub.mid	WhereItsAt.mid
TheHoundsOfWinter.mid	TheyCantTakeThataWayFromMe.mid	UncleMeat.mid	WellBeTogether.mid	WhereOrWhen.mid
TheImpossibleDream.mid	TheyDanceAlone.mid	UnePetiteCantate.mid	WereInThisLoveTogether.mid	WhereYouLead.mid
TheLastFarewell.mid	Think.mid	Unforgettable.mid	WeWorkTheBlackSeam.mid	Whispering.mid
TheLegatoTechnique.mid	ThisCowboySong.mid	UniversalMind.mid	WhatAKindOfFool.mid	WhiterShadeOfPale.mid
TheLoner.mid	ThisMasquerade.mid	UptightEverythingIsAlright.mid	WhatKindOfFoolAmI.mid	Whitewash.mid
TheManILove.mid	TigerRag.mid	UpUpAndAway.mid	WhatsAWoman.mid	WhoCanITurnTo.mid
ThemeFromLumpyGravy.mid	ToBeWithYouAgain.mid	Valerie.mid	WhatsGoinOn.mid	WhosCryingNow2.mid
ThePartysOver.mid	TooHot.mid	Valparaiso.mid	WhatSheReallyWants.mid	WhosCryinNow.mid
ThePrincess.mid	TooLate.mid	Vehicle.mid	WhatsNew.mid	WhosSorryNow.mid
TheresaSmallHotel.mid	TooTired.mid	Vincent.mid	WhatsNewInBaltimore.mid	WhyCantThisNightGoOnForever.mid
TheresOnlyOneWayToRock.mid	TouristInParadise.mid	VirtualReality.mid	WheelintheSky.mid	WhyCantWeLiveTogether.mid
ThereWillNeverBeAnotherYou.mid	Tracie.mid	WabashCannonBall.mid	Wheels.mid	WhyShouldICryForYou.mid
TheseBootsWereMadeForWalking.mid	Trambone.mid	WalkAwayRenee.mid	WhenAWoman.mid	WildNights.mid
TheSecretMariage.mid	TroubleEveryDay.mid	WalkBetweentheRaindrops.mid	WheneverISayYourName.mid	WildWoodFlower.mid
TheShadowOfYourSmile.mid	TryALittleTenderness.mid	WalkinByMyself.mid	WhenTheSaintsGoMarchingIn.mid	WillieThePimp.mid
TheSummerKnows.mid	TunayNaMahal.mid	WalkintheSun.mid	WhenTheWaterBreaks.mid	WillowWeepForMe.mid
TheSunGoesDown.mid	Tutu.mid	WalkOnBy.mid	WhenWeDance.mid	WindyAndWarm.mid
TheTrailor.mid	TurnYourLoveAround.mid	WatermelonInEasterHay.mid	WhenWillIBeloved.mid	WishfulThinking.mid
TheWayItIs.mid	TwentyFiveToMidnight.mid	WatermelonMan.mid	WhenYouLoveAWoman.mid	Witchcraft.mid
TheWayWeWere.mid	TwentySmallCigars.mid	WeddingBellBlues.mid	WhenYoureAloneItAintEasy.mid	Wobegon.mid
TheWayYouLookTonight.mid	TwoKids.mid	WeddingDressSong.mid	WhenYourLoverHasGone.mid	WomanInLove.mid
	TwoSleepyPeople.mid	WednesdaysChild.mid		WonderfulWonderful.mid

WonderfulWorld.mid	YouDontBringMeFlowers.mid	YouMakeMeSmile.mid	YouveChanged.mid
Woodstock.mid	YouDontKnowMe.mid	YoungAtHeart.mid	YouveMadeMeSoVeryHappy.mid
WorkingMyWayBackToYou.mid	YouDontKnowMyName.mid	YoureAllINeedToGetBy.mid	ZootAllures.mid
WorldMachine.mid	YouDontKnowWhatLoveIs.mid	YoureGonnaBeSorry.mid	ZorbaTheGreek.mid
YaketyAxe.mid	YouGoToMyHead.mid	YoureNobodyTillSomebodyLovesYou.mid	
YankeeDoodleDixie.mid	YouKnowImNoGood.mid	YoureNoGood.mid	
Yesterday.mid	Youllneverfind.mid	YourLoveIsKing.mid	
Yesterdays.mid	YoullNeverFindAnotherLoveLikeMine.mid	YoursIsMyHeartAlone.mid	
YouAreMyDestiny.mid	YoullNeverKnow.mid	YourSong.mid	
YouAreTheSunshineOfMyLife.mid	YouMakeMeFeelLike.mid	YouStillTouchMe.mid	
YouAreTooBeautiful.mid			

Appendix 2: Khoush Filenames

12 Menuets HobIX3.mid	alb_esp1.mid	appass_2.mid	beethoven_hammerklavier_4.mid
12 Menuets HobIX8.mid	alb_esp2.mid	appass_3.mid	beethoven_les_adieux_1.mid
20 Variations for Keyboard HobXVII2.mid	alb_esp3.mid	APPSPG13.MID	beethoven_les_adieux_2.mid
21AD098.MID	alb_esp4.mid	bach	beethoven_les_adieux_3.mid
825-830	alb_esp5.mid	bach_846.mid	beethoven_opus10_1.mid
825-830.zip	alb_esp6.mid	bach_847.mid	beethoven_opus10_2.mid
846-869.zip	alb_se1.mid	bach_850.mid	beethoven_opus10_3.mid
870-881.zip	alb_se2.mid	BADINERI (2).mid	beethoven_opus22_1.mid
910-916.zip	alb_se3.mid	BADINERI.mid	beethoven_opus22_2.mid
972-987.zip	alb_se4.mid	balakir	beethoven_opus22_3.mid
AIR (2).mid	alb_se5.mid	beeth	
AIR.mid	alb_se6.mid	beethoven_hammerklavier_1.mid	
albeniz	alb_se7.mid	beethoven_hammerklavier_2.mid	
	alb_se8.mid	beethoven_hammerklavier_3.mid	
	American in Paris.mid		
	appass_1.mid		

beethoven_opus22_4.mid	bor_ps6.mid	bwv1005.zip	bwv867.mid
d	bor_ps7.mid	bwv1006.zip	bwv868.mid
beethoven_opus90_1.mid	BOURREE (2).mid	bwv1066.zip	bwv869.mid
d	BOURREE (3).mid	bwv1067.zip	bwv870.mid
beethoven_opus90_2.mid	BOURREE (4).mid	bwv1068.zip	bwv871.mid
d	BOURREE.mid	bwv1069.zip	bwv872.mid
bjsbmm01.mid	brahms	bwv232.zip	bwv873.mid
bjsbmm02.mid	brahms_opus117_1.mid	BWV825.MID	bwv874.mid
bjsbmm03.mid	brahms_opus117_2.mid	BWV826.MID	bwv875.mid
bjsbmm04.mid	brahms_opus1_1.mid	BWV827.MID	bwv876.mid
bjsbmm05.mid	brahms_opus1_2.mid	BWV828.MID	bwv877.mid
bjsbmm06.mid	brahms_opus1_3.mid	BWV829.MID	bwv878.mid
bjsbmm07.mid	brahms_opus1_4.mid	BWV830.MID	bwv879.mid
bjsbmm08.mid	br_im2.mid	bwv846.mid	bwv880.mid
bjsbmm09.mid	br_im5.mid	bwv847.mid	bwv881.mid
bjsbmm10.mid	BR_IM6.MID	bwv848.mid	BWV910.MID
bjsbmm11.mid	br_rhap.mid	bwv849.mid	BWV911.MID
bjsbmm12.mid	burgm	bwv850.mid	BWV912.MID
bjsbmm13.mid	burg_agitato.mid	bwv851.mid	BWV913.MID
bjsbmm14.mid	burg_erwachen.mid	bwv852.mid	BWV914.MID
bjsbmm15.mid	burg_geschwindigkeit.mid	bwv853.mid	BWV915.MID
bjsbmm16.mid	id	bwv854.mid	BWV916.MID
bjsbmm17.mid	burg_gewitter.mid	bwv855.mid	BWV972.MID
bjsbmm18.mid	burg_perlen.mid	bwv856.mid	BWV973.MID
bjsbmm19.mid	burg_quelle.mid	bwv857.mid	BWV974.MID
bjsbmm20.mid	burg_spinnerlied.mid	bwv858.mid	BWV975.MID
bjsbmm21.mid	burg_sylphen.mid	bwv859.mid	BWV976.MID
bjsbmm22.mid	burg_trennung.mid	bwv860.mid	BWV977.MID
bjsbmm23.mid	bwv1001	bwv861.mid	BWV978.MID
borodin	bwv1001.zip	bwv862.mid	BWV979.MID
bor_ps1.mid	bwv1002.zip	bwv863.mid	BWV980.MID
bor_ps2.mid	bwv1003.zip	bwv864.mid	BWV981.MID
bor_ps3.mid	bwv1004	bwv865.mid	BWV982.MID
bor_ps4.mid	bwv1004.zip	bwv866.mid	BWV983.MID
bor_ps5.mid			

BWV984.MID	chpn_op25_e1.mid	Fanfare for the common man.mid	grieg_zwerge.mid
BWV985.MID	chpn_op25_e11.mid	FORLANE.mid	Gypsy Songs Op.55 No.1 & 5.mid
BWV986.MID	chpn_op25_e12.mid	GAVOTTE (2).mid	haydn
BWV987.MID	chpn_op25_e2.mid	GAVOTTE (3).mid	haydn_33_1.mid
Capriccio.mid	chpn_op25_e3.mid	GAVOTTE.mid	haydn_33_2.mid
chopin	chpn_op25_e4.mid	German Dance No.1.mid	haydn_33_3.mid
chpn-p1.mid	chpn_op27_1.mid	German Dance No.5.mid	haydn_35_1.mid
chpn-p10.mid	chpn_op27_2.mid	German Dance No.6.mid	haydn_35_2.mid
chpn-p11.mid	chpn_op33_2.mid	GIGUE (2).mid	haydn_35_3.mid
chpn-p12.mid	chpn_op33_4.mid	GIGUE.mid	haydn_43_1.mid
chpn-p13.mid	chpn_op35_1.mid	GP_SLAV8.MID	haydn_43_2.mid
chpn-p14.mid	chpn_op35_2.mid	granados	haydn_43_3.mid
chpn-p15.mid	chpn_op35_3.mid	gra_esp_2.mid	haydn_7_1.mid
chpn-p16.mid	chpn_op35_4.mid	gra_esp_3.mid	haydn_7_2.mid
chpn-p17.mid	chpn_op53.mid	gra_esp_4.mid	haydn_7_3.mid
chpn-p18.mid	chpn_op66.mid	grieg	haydn_8_1.mid
chpn-p19.mid	chpn_op7_1.mid	grieg_album.mid	haydn_8_2.mid
chpn-p2.mid	chpn_op7_2.mid	grieg_berceuse.mid	haydn_8_3.mid
chpn-p20.mid	chp_op18.mid	grieg_brooklet.mid	haydn_8_4.mid
chpn-p21.mid	chp_op31.mid	grieg_butterfly.mid	haydn_9_1.mid
chpn-p22.mid	COPCLARC.MID	grieg_elfentanz.mid	haydn_9_2.mid
chpn-p23.mid	COURANTE.mid	grieg_halling.mid	haydn_9_3.mid
chpn-p24.mid	Danza de Jalisco.mid	grieg_kobold.mid	hay_40_1.mid
chpn-p3.mid	debussy	grieg_march.mid	hay_40_2.mid
chpn-p4.mid	debussy_cc_1.mid	grieg_once_upon_a_time.mid	Humoresque No.5 in A Minor Op.101.mid
chpn-p5.mid	debussy_cc_2.mid	grieg_spring.mid	It Ain't Necessarily So.mid
chpn-p6.mid	debussy_cc_3.mid	grieg_voeglein.mid	Khoushfilenames.txt
chpn-p7.mid	debussy_cc_4.mid	grieg_waechter.mid	KHOUSHpolyseqx2
chpn-p8.mid	debussy_cc_6.mid	grieg_walzer.mid	KHOUSHseqex
chpn-p9.mid	DEB_CLAI.MID	grieg_wanderer.mid	KHOUSHseqex2
chpn_op10_e01.mid	deb_menu.mid	grieg_wedding.mid	khoush_polyrnn2
chpn_op10_e05.mid	DEB_PASS.MID		
chpn_op10_e12.mid	deb_prel.mid		
chpn_op23.mid	elise.mid		

khoush_polyrnn2_evaluate_nn_on_testing_data.py	mendel_op30_2.mid	mz_331_3.mid	POLONAIS.mid
khoush_rnn	mendel_op30_3.mid	mz_332_1.mid	Porgy and Bess.mid
khoush_rnn2	mendel_op30_4.mid	mz_332_2.mid	Prelude 1 Allegro ben ritmato e deciso.mid
Let me be Alone at the Brook, Opus.82.mid	mendel_op30_5.mid	mz_332_3.mid	Prelude 2 Andante con moto e poco rubato.mid
liszt	mendel_op53_5.mid	mz_333_1.mid	Prelude 3 Allegro ben ritmato e deciso.mid
liz_donjuan.mid	mendel_op62_3.mid	mz_333_2.mid	rejouiss.mid
liz_et1.mid	mendel_op62_4.mid	mz_333_3.mid	Romantic Pieces op75 No.2.mid
liz_et2.mid	mendel_op62_5.mid	mz_545_1.mid	RONDEAU (2).mid
liz_et3.mid	MENUET (2).mid	mz_545_2.mid	RONDEAU.mid
liz_et4.mid	MENUET (3).mid	mz_545_3.mid	SARABAND (2).mid
liz_et5.mid	MENUET.mid	mz_570_1.mid	SARABAND.mid
liz_et6.mid	Miniature Concerto for Piano and Orchestra.mid	mz_570_2.mid	schubert
liz_et_trans4.mid	mond_1.mid	mz_570_3.mid	schubert_D850_1.mid
liz_et_trans5.mid	mond_2.mid	OVERTURE (2).mid	schubert_D850_2.mid
liz_et_trans8.mid	mond_3.mid	OVERTURE (3).mid	schubert_D850_3.mid
liz_liebstraum.mid	mozart	OVERTURE (4).mid	schubert_D850_4.mid
liz_rhap02.mid	muss	OVERTURE.mid	schubert_D935_1.mid
liz_rhap09.mid	muss_1.mid	PASSPIED.mid	schubert_D935_2.mid
liz_rhap10.mid	muss_2.mid	pathetique_1.mid	schubert_D935_3.mid
liz_rhap12.mid	muss_3.mid	pathetique_2.mid	schubert_D935_4.mid
liz_rhap15.mid	muss_4.mid	pathetique_3.mid	schub_d760_1.mid
Lullaby.mid	muss_5.mid	Piano Concerto in F, 1st movement.mid	schub_d760_2.mid
Medley from An American in Paris.mid	muss_6.mid	Piano Piece n1.mid	schub_d760_3.mid
mendelssohn	muss_7.mid	Piano Piece n10.mid	schub_d760_4.mid
mendel_op19_1.mid	muss_8.mid	Piano Piece n2.mid	schub_d960_1.mid
mendel_op19_2.mid	mz_311_1.mid	Piano Piece n3.mid	schub_d960_2.mid
mendel_op19_3.mid	mz_311_2.mid	Piano Piece n4.mid	schub_d960_3.mid
mendel_op19_4.mid	mz_311_3.mid	Piano Piece n5.mid	schub_d960_4.mid
mendel_op19_5.mid	mz_330_1.mid	Piano Piece n6.mid	schuim-1.mid
mendel_op19_6.mid	mz_330_2.mid	Piano Piece n7.mid	schuim-2.mid
mendel_op30_1.mid	mz_330_3.mid	Piano Piece n8.mid	schuim-3.mid
	mz_331_1.mid	Piano Piece n9.mid	
	mz_331_2.mid	POLONAIS (2).mid	

schuim-4.mid	scn68_12.mid	Sonata n42 2mov XVI27.mid	Sunday Traffic.mid
schumann	Slavonic Dance No.10.mid	Sonata n42 3mov XVI27.mid	Swanee.mid
schumm-1.mid	Slavonic dances No.5 in A Op46.mid	Sonata n44 1mov XVI29.mid	Symphony n101 1mov "Clock".mid
schumm-2.mid	Someone To Watch Over Me.mid	Sonata n44 3mov XVI29.mid	Symphony n101 2mov "Clock".mid
schumm-3.mid	Sonata n01 1mov XVI8.mid	Sonata n48 1mov XVI35.mid	Symphony n101 3mov "Clock".mid
schumm-4.mid	Sonata n01 2mov XVI8.mid	Sonata n48 3mov XVI35.mid	Symphony n101 4mov "Clock".mid
schumm-5.mid	Sonata n01 3mov XVI8.mid	Sonata n49 1mov XVI36.mid	Symphony n104 1mov "London".mid
schumm-6.mid	Sonata n01 4mov XVI8.mid	Sonata n49 2mov XVI36.mid	Symphony n104 2mov "London".mid
schum_abegg.mid	Sonata n02 1mov XVI7.mid	Sonata n49 3mov XVI36.mid	Symphony n104 3mov "London".mid
schu_143_1.mid	Sonata n03 1mov XVI9.mid	Sonata n52 1mov XVI39.mid	Symphony n104 4mov "London".mid
schu_143_2.mid	Sonata n03 2mov XVI9.mid	Sonata n52 2mov XVI39.mid	Symphony n28 1mov.mid
schu_143_3.mid	Sonata n03 3mov XVI9.mid	Sonata n52 3mov XVI39.mid	Symphony n45 1mov "Farewell".mid
scn15_1.mid	Sonata n10 1mov XVI1.mid	Sonata n54 1mov XVI40.mid	Symphony n45 4mov "Farewell".mid
scn15_10.mid	Sonata n10 2mov XVI1.mid	Sonata n54 2mov XVI40.mid	Symphony n55 1mov "Der Schulmeister".mid
scn15_11.mid	Sonata n10 3mov XVI1.mid	Sonata n58 1mov XVI48.mid	Symphony n55 2mov "Der Schulmeister".mid
scn15_12.mid	Sonata n29 1mov XVI45.mid	Sonata n58 2mov XVI48.mid	Symphony n55 3mov "Der Schulmeister".mid
scn15_13.mid	Sonata n29 2mov XVI45.mid	Sonata n59 1mov XVI49.mid	Symphony n55 4mov "Der Schulmeister".mid
scn15_2.mid	Sonata n29 3mov XVI45.mid	Sonata n59 3mov XVI49.mid	Symphony n70 1mov.mid
scn15_3.mid	Sonata n41 1mov XVI26.mid	Sonata No.7.mid	Symphony n76 1mov.mid
scn15_4.mid	Sonata n41 2mov XVI26.mid	Suites (2).txt	Symphony n76 2mov.mid
scn15_5.mid	Sonata n41 3mov XVI26.mid	Suites (3).txt	Symphony n76 3mov.mid
scn15_6.mid	Sonata n42 1mov XVI27.mid	Suites (4).txt	Symphony n76 4mov.mid
scn15_7.mid		Suites.txt	
scn15_8.mid			
scn15_9.mid			
scn16_1.mid			
scn16_2.mid			
scn16_3.mid			
scn16_4.mid			
scn16_5.mid			
scn16_6.mid			
scn16_7.mid			
scn16_8.mid			
scn68_10.mid			

Symphony n85 "La reine".mid	Symphony n96 1mov "Miracle".mid	ty_november.mid	vp3-3gav.mid
Symphony n88 1mov.mid	Symphony n96 2mov "Miracle".mid	ty_oktober.mid	vp3-4min.mid
Symphony n88 2mov.mid	Symphony n96 3mov "Miracle".mid	ty_september.mid	vp3-5bou.mid
Symphony n88 3mov.mid	Symphony n96 4mov "Miracle".mid	Violin & Piano Sonatina.mid	vp3-6gig.mid
Symphony n88 4mov.mid	Symphony No.3, Mov.1.mid	vp1-1al.mid	vs1-1ada.mid
Symphony n90 1mov.mid	The Promise of Living - from the Tender Land.mid	vp1-2ald.mid	vs1-2fug.mid
Symphony n90 3mov.mid	tschai	vp1-3co.mid	vs1-3sic.mid
Symphony n90 4mov.mid	ty_april.mid	vp1-4cod.mid	vs1-4prs.mid
Symphony n94 1mov "Surprise".mid	ty_august.mid	vp1-5sa.mid	vs2-1gra.mid
Symphony n94 2mov "Surprise".mid	ty_dezember.mid	vp1-6sad.mid	vs2-2fug.mid
Symphony n94 3mov "Surprise".mid	ty_februar.mid	vp1-7tb.mid	vs2-3and.mid
Symphony n94 4mov "Surprise".mid	ty_januar.mid	vp1-8tbd.mid	vs2-4alg.mid
	ty_juli.mid	vp2-1all.mid	vs3-1ada.mid
	ty_juni.mid	vp2-2cou.mid	vs3-2fug.mid
	ty_maerz.mid	vp2-3sar.mid	vs3-3lar.mid
	ty_mai.mid	vp2-4gig.mid	vs3-4alg.mid
		vp2-5cha.mid	waldstein_1.mid
		vp3-1pre.mid	waldstein_2.mid
		vp3-2lou.mid	waldstein_3.mid

Appendix 3: Meduse Filenames

003706b_.mid	004407b_.mid	005903b_.mid	006704b_.mid
003806b_.mid	004507b_.mid	006005b_.mid	006707b_.mid
003907bv.mid	004606bs.mid	006106b_.mid	006906ba.mid
003907b_.mid	004606b_.mid	006206bv.mid	006906bav.mid
004003b_.mid	004705b_.mid	006206b_.mid	006906b_.mid
004006b_.mid	004803b_.mid	006402b_.mid	007007b_.mid
004008b_.mid	004807b_.mid	006404b_.mid	007011b_.mid
004106bs.mid	005206b_.mid	006408b_.mid	007011ch.mid
004106b_.mid	005505b_.mid	006502b_.mid	007206b_.mid
004207b_.mid	005605b_.mid	006507b_.mid	007305bv.mid
004311b_.mid	005708b_.mid	006606b_.mid	007305b_.mid

007408b_.mid	010107b_.mid	013506b_.mid	016106b_.mid
007507b_.mid	010207b_.mid	013606b_.mid	016206b_.mid
007514b_.mid	010306b_.mid	013701b_.mid	016406b_.mid
007607b_.mid	010406bv.mid	013702b_.mid	016506b_.mid
007614b_.mid	010406b_.mid	013703b_.mid	016606b_.mid
007706b_.mid	010506b_.mid	013705b_.mid	016806b_.mid
007807b_.mid	010602b_.mid	013705ch.mid	016907b_.mid
007903bs.mid	010707b_.mid	013807b_.mid	017106b_.mid
007903b_.mid	010806b_.mid	013906b_.mid	017206b_.mid
007906b_.mid	011007b_.mid	014001b_.mid	017206ch.mid
008008b_.mid	011106b_.mid	014004b_.mid	017206vn.mid
008107b_.mid	011205b_.mid	014007b_.mid	017405b_.mid
008305b_.mid	011308b_.mid	014403b_.mid	017507b_.mid
008405b_.mid	011407b_.mid	014406b_.mid	017507ch.mid
008506b_.mid	011506bv.mid	014500ba.mid	017606b_.mid
008606b_.mid	011506b_.mid	014505bv.mid	017705bv.mid
008707b_.mid	011606b_.mid	014505b_.mid	017705b_.mid
008807b_.mid	011704b_.mid	014608b_.mid	017807b_.mid
008906b_.mid	011704v1.mid	014706b_.mid	017906b_.mid
009005b_.mid	011704v2.mid	014710b_.mid	018007bv.mid
009106b_.mid	011909b_.mid	014806bv.mid	018007b_.mid
009106ch.mid	012006b_.mid	014806b_.mid	018305b_.mid
009207b_.mid	012008ba.mid	014907b_.mid	018405bv.mid
009209b_.mid	012106b_.mid	014907ch.mid	018405b_.mid
009307b_.mid	012206b_.mid	015105b_.mid	018506b_.mid
009408b_.mid	012306b_.mid	015301b_.mid	018707b_.mid
009507b_.mid	012406b_.mid	015305b_.mid	018806b_.mid
009606b_.mid	012506b_.mid	015309b_.mid	019007b_.mid
009709b_.mid	012606bv.mid	015403b_.mid	019007ch.mid
009709ch.mid	012606b_.mid	015408b_.mid	019406bv.mid
009801b_.mid	012705b_.mid	015505b_.mid	019406b_.mid
009906b_.mid	012805b_.mid	015606b_.mid	019412b_.mid
01 Menuet.mid	012905b_.mid	015705b_.mid	019506b_.mid
010006b_.mid	013006b_.mid	015804b_.mid	019705b_.mid
010107bv.mid	013306b_.mid	015905b_.mid	019707ba.mid

019710b_.mid	024528b_.mid	026400b_.mid	029800b_.mid
02 Menuet.mid	024537b_.mid	026500b_.mid	029900b_.mid
022602bv.mid	024540b_.mid	026600b_.mid	03 Menuet.mid
022602b_.mid	024805b1.mid	026700ba.mid	030000b_.mid
022701b_.mid	024809b1.mid	026700b_.mid	030100b_.mid
022703b_.mid	024809bs.mid	026800b_.mid	030200b_.mid
022707b_.mid	024812b2.mid	026900b_.mid	030300b_.mid
022709b_.mid	024817b2.mid	027000b_.mid	030400b_.mid
022711b_.mid	024823b2.mid	027100b_.mid	030500b_.mid
022902b_.mid	024823bs.mid	027200b_.mid	030600b_.mid
024310b_.mid	024828b3.mid	027300b_.mid	030700b_.mid
024403b_.mid	024833b3.mid	027400b_.mid	030800b_.mid
024410b_.mid	024835b3.mid	027500b_.mid	030900b_.mid
024415bv.mid	024842b4.mid	027600b_.mid	031000b_.mid
024415b_.mid	024842bs.mid	027700b_.mid	031100b_.mid
024417bv.mid	024846b5.mid	027800b_.mid	031200b_.mid
024417b_.mid	024853b5.mid	027900b_.mid	031300b_.mid
024425b_.mid	024859b6.mid	028000b_.mid	031400b_.mid
024429bb.mid	024864b6.mid	028100b_.mid	031500b_.mid
024432b_.mid	024864bs.mid	028200b_.mid	031600b_.mid
024437b_.mid	024864qt.mid	028300b_.mid	031700b_.mid
024440b_.mid	025000b_.mid	028400b_.mid	031800b_.mid
024444b_.mid	025100b_.mid	028500b_.mid	031900b_.mid
024446b_.mid	025200b_.mid	028600b_.mid	032000b_.mid
024454b_.mid	025300b_.mid	028700b_.mid	032100b_.mid
024462bv.mid	025400b_.mid	028800b_.mid	032200b_.mid
024462b_.mid	025500b_.mid	028900b_.mid	032300b_.mid
024503b_.mid	025600b_.mid	029000b_.mid	032400b_.mid
024505b_.mid	025700b_.mid	029100b_.mid	032500b_.mid
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033800b_.mid	037300bv.mid	040500b_.mid	05 Polonaise.mid
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066600b_.mid	Arndt	bsgjg_k.mid	Bwv006.6.mid
066700b_.mid	AveMaria.mid	bsgjg_l.mid	Bwv007.7.mid
066800b_.mid	Bacewitz	Burgmuller	Bwv008.6.mid
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069000b_.mid	Barber	Busser	Bwv010.7.mid
069100b_.mid	Bartelet	Buxehude	Bwv011.6.mid
069100orn.mid	Bartok	Buxethude Buxwv136 Prelude.mid	Bwv012.7.mid
069400b_.mid	Bartok Suite 1mov.mid	Buxethude Buxwv138 Prelude.mid	Bwv013.6.mid
07 Rondo.mid	Bartok Suite 2mov.mid	Buxethude Buxwv145 Prelude.mid	Bwv014.5.mid
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070100b_.mid	Beethoven	Buxethude Buxwv155 Toccata.mid	Bwv017.7.mid
073300b_.mid	Bellini	Buxethude Buxwv156 Toccata.mid	Bwv018.5.mid
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076903b_.mid	Bizet Symphony in C 1mov.mid	Buxethude Buxwv160 Ciacona.mid	Bwv020.11.mid
076904b_.mid	Bizet Symphony in C 2mov.mid	Buxethude Buxwv161 Passcaglia.mid	Bwv020.7.mid
076905b_.mid	Bizet Symphony in C 3mov.mid	Buxethude Buxwv162 Prelude.mid	Bwv024.6.mid
08 Polonaise.mid	Bizet Symphony in C 4mov.mid	Buxethude Buxwv167 Canzonetta.mid	Bwv024.6s.mid
09 Menuet.mid	Borodin	Bwv001.6.mid	Bwv025.6.mid
10 Menuet.mid	Botsford	Bwv001.mid	Bwv025.6v1.mid
109100b_.mid	Brahms	Bwv002.6.mid	Bwv025.6v2.mid
11 Marche.mid	bsgjg_a.mid	Bwv003.6.mid	Bwv026.6.mid
12 Polonaise.mid	bsgjg_b.mid	Bwv003.6v.mid	Bwv027.6.mid
13 Marche.mid	bsgjg_c.mid	Bwv004.8.mid	Bwv028.6.mid
14 Polonaise.mid	bsgjg_d.mid	Bwv004.8v.mid	Bwv029.8.mid
15 Musette.mid	bsgjg_e.mid	Bwv005.7.mid	Bwv029.8ch.mid
16 Marche.mid	bsgjg_f.mid	Bwv006.3.mid	Bwv030.6.mid
17 Polonaise.mid	bsgjg_g.mid		Bwv030.6v.mid
A fairy tale.mid	bsgjg_h.mid		Bwv031.9.mid
Albe'niz	bsgjg_i.mid		Bwv032.6.mid
Alkan	bsgjg_j.mid		Bwv033.6.mid
Ambroise			Bwv036(2).4.mid
Aragon (Fantasia) Op.47 part 6.mid			Bwv036(2).8.mid
Arensky			Bwv0525 Sonate en trio n1.mid

Bwv0526 Sonate en trio n2.mid	Bwv0551 Prelude and Fugue.mid	Bwv0590 Pastorale.mid	Bwv0815 French Suite n4.mid
Bwv0527 Sonate en trio n3.mid	Bwv0552 Prelude and Fugue "St. Anne".mid	Bwv0593 Vivaldi Concerto Arrangement RV522.mid	Bwv0816 French Suite n5.mid
Bwv0528 Sonate en trio n4.mid	Bwv0554 Short Prelude and Fugue n2 (Spurious).mid	Bwv0594 Vivaldi Concerto Arrangement RV208.mid	Bwv0817 French Suite n6.mid
Bwv0529 Sonate en trio n5.mid	Bwv0555 Short Prelude and Fugue n3 (Spurious).mid	Bwv0733 Fuga Sopra Magnificat.mid	Bwv0906 Fantasia and Fugue.mid
Bwv0530 Sonate en trio n6.mid	Bwv0556 Short Prelude and Fugue n4 (Spurious).mid	Bwv0806 English Suite n1 01mov .mid	Bwv0910 Toccata.MID
Bwv0531 Prelude and Fugue.mid	Bwv0557 Short Prelude and Fugue n5 (Spurious).mid	Bwv0806 English Suite n1 02mov .mid	Bwv0911 Toccata.MID
Bwv0532 Toccata and Fugue.mid	Bwv0558 Short Prelude and Fugue n6 (Spurious).mid	Bwv0806 English Suite n1 03mov .mid	Bwv0912 Toccata.MID
Bwv0533 Prelude and Fugue.mid	Bwv0559 Short Prelude and Fugue n7 (Spurious).mid	Bwv0806 English Suite n1 04mov .mid	Bwv0913 Toccata.MID
Bwv0535 Prelude and Fugue.mid	Bwv0560 Short Prelude and Fugue n8 (Spurious).mid	Bwv0806 English Suite n1 05mov .mid	Bwv0914 Toccata.MID
Bwv0536 Prelude and Fugue.mid	Bwv0561 Fantasie and Fuga.mid	Bwv0806 English Suite n1 06mov .mid	Bwv0915 Toccata.MID
Bwv0537 Fantasia and Fugue.mid	Bwv0563 Fantasie con imitation.mid	Bwv0806 English Suite n1 07mov .mid	Bwv0916 Toccata.MID
Bwv0538 Toccata and Fugue "Dorian".mid	Bwv0564 Toccata Adagio and Fugue.MID	Bwv0806 English Suite n1 08mov .mid	Bwv0933 Little Prelude n1.mid
Bwv0539 Prelude and Fugue.mid	Bwv0565 Toccata and Fugue In Dm A.mid	Bwv0806 English Suite n1 09mov .mid	Bwv0934 Little Prelude n2.mid
Bwv0540 Toccata and Fugue.mid	Bwv0565 Toccata and Fugue In Dm B.mid	Bwv0806 English Suite n1 10mov .mid	Bwv0935 Little Prelude n3.mid
Bwv0541 Prelude and Fugue.mid	Bwv0565 Toccata and Fugue In Dm C.MID	Bwv0811 English Suite n6 1mov.mid	Bwv0936 Little Prelude n4.mid
Bwv0542 Fantasia and Fugue.mid	Bwv0566 Prelude and Fugue.mid	Bwv0811 English Suite n6 2mov.mid	Bwv0937 Little Prelude n5.mid
Bwv0543 Prelude and Fugue.mid	Bwv0568 Prelude.mid	Bwv0811 English Suite n6 3mov.mid	Bwv0938 Little Prelude n6.mid
Bwv0544 Prelude and Fugue.mid	Bwv0570 Fantasia.mid	Bwv0811 English Suite n6 4mov.mid	Bwv0963 Sonata.mid
Bwv0546 Prelude and Fugue.mid	Bwv0572 Fantasia.mid	Bwv0811 English Suite n6 5mov.mid	Bwv0967 Sonata.mid
Bwv0547 Prelude and Fugue.mid	Bwv0582 Passacaglia and Fugue (Orchestral).mid	Bwv0811 English Suite n6 6mov.mid	Bwv0992 Capriccio.mid
Bwv0549 Prelude and Fugue.mid	Bwv0582 Passacaglia and Fugue.mid	Bwv0811 English Suite n6 7mov.mid	Bwv0996 Suite for Lute.mid
Bwv0550 Prelude and Fugue.mid		Bwv0811 English Suite n6 8mov.mid	Bwv0997 Partita for Lute 1mov.mid
			Bwv0997 Partita for Lute 2mov.mid
			Bwv0997 Partita for Lute 3mov.mid
			Bwv0997 Partita for Lute 4mov.mid
			Bwv0997 Partita for Lute 5mov.mid

Bwv0998 Prelude Fugue Allegro for Lute 1mov.mid	Chaminade	Diabelli Sonatina op151 n3 2mov.mid	Excursions No.2.mid
Bwv0998 Prelude Fugue Allegro for Lute 2mov.mid	Chantes Op 38,No.1.mid	Diabelli Sonatina op151 n3 3mov.mid	Excursions No.3.mid
Bwv0998 Prelude Fugue Allegro for Lute 3mov.mid	Chasins	Diabelli Sonatina op151 n4 1mov.mid	Excursions No.4.mid
Bwv1005 Violin Sonata n3 1mov Adagio.mid	Chopin	Diabelli Sonatina op151 n4 2mov.mid	Faure
Bwv1005 Violin Sonata n3 2mov Fugue.mid	Clarke	Durand, E	Field
Bwv1005 Violin Sonata n3 3mov Largo.mid	Clavierbung Part 111,Duet No.2 in F Major.mid	Durand, MA	Finck
Bwv1005 Violin Sonata n3 4mov Allegro.mid	Clementi	Dusseck	Flotow
Bwv1014 Harpsicord and Violin Sonata 1mov.mid	Coates	Dvorak	Franck
Bwv1014 Harpsicord and Violin Sonata 2mov.mid	Coleridge-Taylor	Dvorak Slavonic dance n8.mid	Frescobaldi
Bwv1014 Harpsicord and Violin Sonata 3mov.mid	Cons	Dvorak Symphony op70 n7 1mov.mid	Friedman
Bwv1014 Harpsicord and Violin Sonata 4mov.mid	Copland	Dvorak Symphony op70 n7 2mov.mid	Fucick
Bwv1046 aSinfonia h.mid	Couperin	Dvorak Symphony op70 n7 3mov.mid	Ganne
Bwv768 Chorale and Variations	Cramer	Dvorak Symphony op70 n7 4mov.mid	German
Bwv802 Four Inventions (Duettos) Clavier- U_bung III n1.mid	Czerny	Dvorak Trio op26.mid	Gershwin
C.P.E.Bach Solfeggieto.mid	Czibulka	Espana Op. 165.mid	Ginastera
Castilla (Seguidillas) Op.47 part 7.mid	Dance Fantastique.mid	Espan~a Op. 165 No.1.mid	Ginastera Estancia.mid
Cataluna (Curranda), No.2 from Suite Espanola.mid	Debussy	Espan~a Op. 165 No.2.mid	Gottschalk
Catalun~a (Curranda), No.2 from Suite Espanola.mid	Debussy Suite Bergamasque 1mov.mid	Espan~a Op. 165 No.3.mid	Grainger
Chabrier	Debussy Suite Bergamasque 2mov.mid	Espan~a Op. 165 No.4.mid	Grieg
	Debussy Suite Bergamasque 3mov.mid	Espan~a Op. 165 No.5.mid	Grieg Piano Concerto 2mov.mid
	Diabelli Sonatina op151 n1 1mov.mid	Espan~a Op. 165 No.6.mid	Grieg Piano Concerto op16 1mov.mid
	Diabelli Sonatina op151 n1 2mov.mid	Etude Op.35 No.5.mid	Griffes
	Diabelli Sonatina op151 n1 3mov.mid	Etude Op.39 No.12.MID	Gros Temps (Foul Weather) From Les Mois , Op. 74, Bk. 4, No. 1.mid
	Diabelli Sonatina op151 n2 1mov.mid	Etude Op.76 No.2.mid	Haendel
	Diabelli Sonatina op151 n2 2mov.mid	Etude Op.76 No.3 for both hands.mid	Hallelujah (Psalm 150).mid
	Diabelli Sonatina op151 n2 3mov.mid	Excursions No.1.mid	Handel
	Diabelli Sonatina op151 n3 1mov.mid		Haydn
			Heidrich
			Heller
			Hemery

Herold	Liszt Paganini Etude n2.mid	Pachebel Toccata n3.mid	Piano version of Bachs two part inventions No.6.mid
Hiller	Liszt Paganini Etude n3.mid	Pachebel Toccata n4.mid	Piano version of Bachs two part inventions No.7.mid
Holst	Liszt Paganini Etude n5.mid	Pachebel Toccata n7.mid	Piano version of Bachs two part inventions No.8.mid
Holst, M	Lizt Piano Concerto n1 S124.mid	Pachelbel	Piano version of Bachs two part inventions No.9.mid
Hummel	Lyssenko	Paderewski	Piezas caracteristicas, Gavotte.mid
Ivanovici	MacBeth	Paganini	Pollen Beguine Royale.mid
Jakobowski	MacCunn	Paradisi	Polonaise (1905)..mid
Jensen	Maier	Peterson-Berger	Poulenc
Jesu Joy of Man Desiring.mid	Mallorca (Barcarola).mid	Piano version of Bachs two part inventions No...mid	Prelude and Fugue in A, BWV 888.mid
Joplin	meditation thais.mid	Piano version of Bachs two part inventions No.10.mid	Prelude and Fugue in C Sharp BWV 872.mid
Komzak	Medusefilenames.txt	Piano version of Bachs two part inventions No.11.mid	Prelude and Fugue in D.mid
Kuhlau	MEDUSEpolyseqex	Piano version of Bachs two part inventions No.12.mid	Prelude from Sonata n6.mid
Kuhlau Sonatina op20 n1.mid	MEDUSEseqex	Piano version of Bachs two part inventions No.13.mid	Pridhan
Kuhlau Sonatina op55 n1.mid	meduse_polyrnn	Piano version of Bachs two part inventions No.14.mid	Prokofiev
Kuhlau Sonatina op55 n3 1mov.mid	meduse_rnn	Piano version of Bachs two part inventions No.15.mid	Psalm 119.mid
Kuhlau Sonatina op60 n2.mid	Mehul	Piano version of Bachs two part inventions No.2.mid	Rachmaninov
Kuhlau Sonatina op60 n3.mid	Mendelsonn	Piano version of Bachs two part inventions No.3.mid	Raff
Lange	Mendelssohn	Piano version of Bachs two part inventions No.4.mid	Ravel
Laurent	Meyerbeer	Piano version of Bachs two part inventions No.5.mid	readme
Lavallee	Minuet in B flat.mid	Piano version of Bachs two part inventions No.2.mid	Reger Burlesque op58 n3.mid
Le Thiere	Minuet in G.mid	Piano version of Bachs two part inventions No.3.mid	Reger Burlesque op58 n5.mid
Lecuona	Morel	Piano version of Bachs two part inventions No.4.mid	Reger Burlesque op58 n6.mid
Lemire	Moszkowski	Piano version of Bachs two part inventions No.5.mid	Reinecke Piano Concerto n3 1mov.mid
Liszt	Mozart		Reinecke Piano Concerto n3 2mov.mid
Liszt Ab irato "The Perfect Etude" S143 R4b.mid	Mussorgski		
Liszt Bach Prelude Transcription.mid	Nicolai Overture The Merry Wives of Windsor.mid		
Liszt Hungarian Rhapsody n2.MID	Nola, Novelty piano solo.mid		
Liszt Paganini Etude n1.mid	Pachebel Toccata n1.mid		
	Pachebel Toccata n2.mid		

Reinecke Piano Concerto n3 3mov.mid	Sarasate	Tchaicovsky Waltz of the Flowers.MID	Tchakoff
Resch	Satie	Tchaikovsky	The complete piano version of -Pictures at an exhibition-.mid
Rimsky Korsakov "Flight Of the Bumblebee".mid	Scarlatti	Tchaikovsky Lake Of The Swans Act 1 1mov.mid	Thomas
Rimsky-Korsakov	Schoenberg	Tchaikovsky Lake Of The Swans Act 1 2mov.mid	Ti'tulo Desconocido 2.mid
Rossini	Schubert	Tchaikovsky Lake Of The Swans Act 1 3mov.mid	Ti'tulo Desconocido 3.mid
Rothchild Horn Concerto Rmw16 1mov.mid	Schumann	Tchaikovsky Lake Of The Swans Act 1 4mov.mid	Ti'tulo Desconocido 4.mid
Rothchild Horn Concerto Rmw16 2mov.mid	Serenade in G Major.mid	Tchaikovsky Lake Of The Swans Act 1 5mov.mid	Ti'tulo Desconocido.mid
Rothchild Horn Concerto Rmw16 3mov.mid	Shostakovich	Tchaikovsky Lake Of The Swans Act 1 6mov.mid	Tocatto No.1 in F Sharp Minor, BWV 910.mid
Rothchild Oboe Concerto Rmw09 1mov.mid	Sibelius	Tchaikovsky Lake Of The Swans Act 1 7- 8movs.mid	Tocatta and Fugue in D minor, BWV 565. (Busoni Piano Arr.mid
Rothchild Oboe Concerto Rmw09 2mov.mid	Sibelius Kuolema Vals op44.mid	Tchaikovsky Lake Of The Swans Act 1 9mov.mid	Torre Bermeja Serenata from Piezas caracteristicas.mid
Rothchild Oboe Concerto Rmw09 3mov.mid	Sinding	Tchaikovsky Lake Of The Swans Act 2 10mov.mid	Triana.mid
Rothchild Piano Sonata Rmw13 1mov.mid	Skriabin	Tchaikovsky Lake Of The Swans Act 2 11mov.mid	Un Nuit D'ete Suite No. 1 from Les Mois Sequenced.mid
Rothchild Piano Sonata Rmw13 2mov.mid	Sonata No.4 for Piano & Violin, Mov.1.mid	Tchaikovsky Lake Of The Swans Act 2 12mov.mid	Valentin Alkan, (82)Le Festin D'esope Op.39..MID
Rothchild Piano Sonata Rmw13 3mov.mid	Sonata No.4 for Piano & Violin, Mov.2.mid	Tchaikovsky Lake Of The Swans Act 2 13mov.mid	Varios - Ti'tulo desconocido
Rothchild Symphony Rmw12 1mov.mid	Sonata No.4 for Piano & Violin, Mov.3.mid	Tchaikovsky Lake Of The Swans Act 2 14mov.mid	Vaughan
Rothchild Symphony Rmw12 2mov.mid	Sonata No.4 for Piano & Violin, Mov.4.mid		Verdi
Rothchild Symphony Rmw12 3mov.mid	Straus		Vivaldi
Saint-Saens	Strauss, J		Wagner
Saltarelle Op. 23.mid	Stravinski		Wagner Ride of the valkyries.mid
	Sudds		Wolf
	Suite Espanola No.5. Asturias.mid		
	Sullivan		
	Suppe		
	Swinstead		
	Tarrega		
	Taube		

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