White Page Paper Resources

Music Classification by Composer MIDI (2012): <http://cs229.stanford.edu/proj2012/LanSaied-MusicClassificationByComposer.pdf>

Summary: Janice Lan and Armon Saied attempt to classify music by composer, using 9 different classical composers from various time periods. They use MIDI files of solo piano compositions in order to keep consistent within their methods of parsing. They extracted a variety of features from the songs, including pitches, note duration, and inter-onset interval. They started with three preliminary algorithms: Naïve Bayes, perceptron learning algorithm, and logistic regression. Later on, implementing the Support Vector Machine model, K-Nearest Neighbors, and the Bayesian Network classifier.

Classifying Musical Scores by Composer \*\*kern (2008): <http://cs229.stanford.edu/proj2008/LebarChangYu-ClassifyingMusicalScoresByComposer.pdf>

Summary: Justin Lebar, Gary Chang, and David Yu attempt to classify music by composer, using 8 different classical composers from various time periods. They use \*\*kern file types, which are textual representations of musical scores, of both keyboard and string quartet compositions. They chose to ignore all attributes except pitches and their durations, for simplicity’s sake. Using Naïve Bayes, Support Vector Machines, Linear and Quadratic Discriminant Analysis, and K-Nearest Neighbors. They concluded that SVM is consistently the more accurate classifier.

Bartok: Music Time Period Classification MIDI (2013): <http://cs229.stanford.edu/proj2013/Bartok-Final-F.pdf>

Summary: Daniel Chiu, Derrick Liu, and Yushi Wang attempt to classify music by subgenre within the larger genre of classical music. They separate into five different sub genres: Baroque, Classical, Renaissance, Romantic, and 20th Century. They use the audio file type MIDI to extract their information. Techniques used included Multinomial Naïve Bayes, SVM, K-Nearest Neighbors, and AdaBoost. They found that SVM qualifiers performed the best, resulting in a 71.04% success rate.

Classification of Musical Genre: <http://art.uniroma2.it/research/musicIR/BasSeraStel_ISMIR04.pdf>

Summary: Roberto Basili, Alfredo Serafini, and Armando Stellato attempt to classify music by genre, including six difference genre classes. They used 300 MIDI audio files to draw from as data. Using Naïve Bayes, Voting Feature Intervals, J48, the PART algorithm, NNge (Nearest-neighbor-like algorithm), and RIPPER (JRip), they received results comparable to previous studies.

Musically Meaningful Homogeneous Style Classification: <http://www.aaai.org/ocs/index.php/AAAI/AAAI14/paper/download/8314/8431>

Summary: William Herland, Yoel Greenberg, Ricky Der, and Simon Levin attempt to improve upon musical classification to create meaningful distinction between homogeneous styles. They demonstrate the power of their system using Hadyn and Mozart’s string quartets, and the results yielded higher accuracy than previous studies in this area, indicating that their algorithms were more through than others. They used 72 MIDI files. Their findings were most accurate with SVM and Bayes classifiers, and Global First-Order seemed to yield the most accurate results, with Local First-Order being the low outlier.

A Simple Genetic Algorithm for Music Generation by means of Algorithmic Information Theory: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.77.6596&rep=rep1&type=pdf>

Summary: Manuel Alfonseca, Manuel Cebrian, and Alfonso Ortega attempt to improve upon music generation using Algorithmic Information Theory. This experiment focused only on Melody, ignoring rhythm and harmony, leaving them for future projects. Music was represented in a textual masis using A-G, - and +, and 1-88 to specify the notes. Using Normalized Compression Distance, they found promising results in the generation of relative pitch.

Characterization of composer style using high-level musical features: <http://dl.acm.org/citation.cfm?id=1878016&CFID=624221899&CFTOKEN=43031700>

Summary: Lesley Mearns, Dan Tidhar, and Simon Dixon attempt to characterize the style of composers in the Baroque and Renaissance eras using features drawn from formal music theory. Using the Kern music score format, analyzing both the intervals and motion of the piece. Results were relatively successful, as they found a 66% success rate in identifying the composer.

Automatic Genre Classification using large high-level musical feature sets: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.449.5297&rep=rep1&type=pdf>

Summary: Cory McKay and Ichiro Fujinaga attempt to classify the genre of 109 MIDI files based on instrumentation, texture, rhythm, dynamics, pitch statistics, melody and chords. They received very encouraging results, featuring a 98% success rate for the root genre, and 90% for leaf genres.

Kulitta Automated Music Composition: <https://www.researchgate.net/publication/281557508_Kulitta_a_Framework_for_Automated_Music_Composition>

Summary: Kulitta is an automated classical music composition system using machine learning. Based in Haskell, it is designed to learn from scores of music and generate music based on its discoveries.

Computer models for algorithmic music composition: <https://www.researchgate.net/profile/ukasz_Mazurowski/publication/261110479_Computer_models_for_algorithmic_music_composition/links/0c9605390d7321bbb3000000.pdf>

Summary: Łukasz Mazurowski attempts to use algorithmic models to generate music compositions, using the MIDI Toolbox in Matlab.

Using Machine-Learning Methods for Musical Style Modeling: <https://www.researchgate.net/publication/2955985_Using_machine-learning_methods_for_musical_style_modeling>

Summary: Shlomo Dubnov, Gerad Assayag, Olivier Lartillot, and Gill Bejerano attempt to use machine learning to produce musical compositions, seeking to capture some of the regularity apparent in the composition process by using statistical and information-theoretic tools to analyze musical pieces.

Algorithmic Compositions based on discovered musical patterns: <http://link.springer.com/article/10.1007%2Fs11042-009-0303-y>

Summary: Man-Kwan Shan and Shih-Chuan Chiu attempt to use data mining techniques in order to discover styled rules of music compositions by music structures, melody styles and motifs.

Developing and evaluating computational models of musical style: <http://apps.webofknowledge.com/full_record.do?product=UA&search_mode=GeneralSearch&qid=2&SID=4FhO1gTIeVoFANQXgUy&page=1&doc=1>

Summary: Tom Collins, Robin Laney, Alistair Willis and Paul H Garthwaite attempt to describe and evaluate two computational models of stylistic compositions, Racchman-Oct2010 and Racchmaninof-Oct2010, to mimic the stylistic composition of Frederic Chopin.

AI Methods in Algorithmic Compositions: A Comprehensive Survey: <https://www.jair.org/media/3908/live-3908-7454-jair.pdf>

Summary: Jose David Fernandez and Francisco Vico attempt to summarize the research that has been done thus far on the topic of algorithmic composition for the audience of researchers in Artificial Intelligence.