What am I going to properly measure in this study? What is my criteria

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- Can it display proper relationships? Can it show that some songs possess this much blues, beethoven and others do not?
- Do I measure accuracy?

1. **Looking at the clusters of songs.** Would a good model be able to cluster songs better? I could measure the spread of data points after this
2. Could look at how much data must be given to the model for it to converge better. Look at **learning curves**
3. **Concrete measurements:**
    - Accuracy, precision, validation and recall should be the last thing I look at
    - A classification confusion matrix
    - Measure generalizability using cross validation

In my conclusions I should also relate back to the applications of this research. It can improve vector databases and how to categorize music.

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how to choose right input data for machine learning - Google Search
https://www.google.com/search?q=how+to+choose+right+input+data+for+machine+learning&sca_esv=584176901&sxsrf=AM9HkKn2u13PiOBFO5l24LI7b6TYCY1XMA%3A1700538891620&ei=CypcZey5Jc-50PEPuYGpoAo&ved=0ahUKEwis676EmdSCAxXPHDQIHblACqQQ4dUDCBA&uact=5&oq=how+to+choose+right+input+data+for+machine+learning&gs_lp=Egxnd3Mtd2l6LXNlcnAiM2hvdyB0byBjaG9vc2UgcmlnaHQgaW5wdXQgZGF0YSBmb3IgbWFjaGluZSBsZWFybmluZzIHECEYoAEYCjIHECEYoAEYCjIHECEYoAEYCkjRW1DnA1jkWnALeAGQAQOYAfkDoAHSQaoBDTEzLjQwLjIuMi4xLjG4AQPIAQD4AQGoAhTCAgcQIxjqAhgnwgIWEAAYAxiPARjlAhjqAhi0AhiMA9gBAcICCxAAGIAEGIoFGJECwgILEAAYgAQYsQMYgwHCAhEQLhiABBixAxiDARjHARjRA8ICDhAuGIAEGIoFGLEDGIMBwgIEECMYJ8ICCxAuGIAEGLEDGIMBwgIKEAAYgAQYFBiHAsICDhAAGIAEGIoFGLEDGIMBwgIFEAAYgATCAggQLhiABBixA8ICBxAjGLECGCfCAgoQABiABBiKBRhDwgIHEAAYgAQYCsICBxAuGIAEGArCAgsQABiABBiKBRixA8ICDRAAGIAEGLEDGIMBGArCAhIQABiABBiKBRixAxiDARgKGEPCAhAQABiABBiKBRixAxiDARhDwgIREC4YgAQYsQMYgwEYxwEYrwHCAgUQLhiABMICBhAAGBYYHsICCxAAGIAEGIoFGIYDwgIEECEYFcICCBAhGBYYHhgdwgIFECEYoAHCAgQQIRgK4gMEGAAgQYgGAboGBggBEAEYCw&sclient=gws-wiz-serp

How to Compare Machine Learning Models and Algorithms

https://neptune.ai/blog/how-to-compare-machine-learning-models-and-algorithms

bias variance tradeoff explained - Google Search
https://www.google.com/search?q=bias+variance+tradeoff+explained&sca_esv=584187651&sxsrf=AM9HkKmscCJAJOHOBd1_q0xPf488obgd4w%3A1700539088911&ei=0CpcZdeWN46s0PEP5P-6oAM&ved=0ahUKEwjXvsjimdSCAxUOFjQIHeS_DjQQ4dUDCBA&uact=5&oq=bias+variance+tradeoff+explained&gs_lp=Egxnd3Mtd2l6LXNlcnAiIGJpYXMgdmFyaWFuY2UgdHJhZGVvZmYgZXhwbGFpbmVkMgUQABiABDILEAAYgAQYigUYhgMyCxAAGIAEGIoFGIYDSPAPUI0CWIgPcAR4AZABAJgBkQGgAfwJqgEDNC44uAEDyAEA-AEBwgIKEAAYRxjWBBiwA8ICDRAAGIAEGIoFGLADGEPCAgcQIxiwAhgnwgIHEAAYgAQYDcICBhAAGBYYHsICCxAAGIAEGIoFGJECwgIKEAAYgAQYFBiHAsICCBAAGBYYHhgP4gMEGAAgQYgGAZAGCg&sclient=gws-wiz-serp

learning curves machine learning - Google Search
https://www.google.com/search?q=learning+curves+machine+learning&oq=learning+curves+machine+learning&gs_lcrp=EgZjaHJvbWUyBggAEEUYOTIICAEQABgWGB4yCAgCEAAYFhgeMggIAxAAGBYYHjIICAQQABgWGB4yCAgFEAAYFhgeMg0IBhAAGIYDGIAEGIoFMg0IBxAAGIYDGIAEGIoF0gEIMzMxNmoxajSoAgCwAgA&sourceid=chrome&ie=UTF-8

What Is the Bias-Variance Tradeoff in Machine Learning?
https://serokell.io/blog/bias-variance-tradeoff

better alternatives for the GTZAN dataset - Google Search
https://www.google.com/search?q=better+alternatives+for+the+GTZAN+dataset&sca_esv=584187651&sxsrf=AM9HkKk0613uhLesarRyEmWqjbi4j_I1pg%3A1700539846326&ei=xi1cZfPFE73x0PEPwLCluAE&ved=0ahUKEwjzwN3LnNSCAxW9ODQIHUBYCRcQ4dUDCBA&uact=5&oq=better+alternatives+for+the+GTZAN+dataset&gs_lp=Egxnd3Mtd2l6LXNlcnAiKWJldHRlciBhbHRlcm5hdGl2ZXMgZm9yIHRoZSBHVFpBTiBkYXRhc2V0MgcQIRigARgKSK9LULgBWIdLcAJ4AZABAJgBlgGgAYQqqgEFMTMuMza4AQPIAQD4AQGoAhTCAgcQIxjqAhgnwgIWEAAYAxiPARjlAhjqAhi0AhiMA9gBAcICChAjGIAEGIoFGCfCAgQQIxgnwgILEAAYgAQYigUYkQLCAgsQABiABBixAxiDAcICERAuGIAEGLEDGIMBGMcBGNEDwgILEC4YgAQYigUYkQLCAgoQABiABBiKBRhDwgILEC4YgAQYsQMYgwHCAgUQABiABMICDhAAGIAEGIoFGLEDGIMBwgIKEAAYgAQYFBiHAsICCBAAGIAEGLEDwgIIEAAYgAQYyQPCAgsQABiABBiKBRiSA8ICBBAAGAPCAhEQLhiABBiKBRixAxiDARjUAsICChAuGIAEGIoFGEPCAhcQLhiABBiKBRixAxiDARjHARjRAxiRAsICDhAAGIAEGIoFGLEDGJECwgINEC4YgAQYigUYsQMYQ8ICDRAAGIAEGIoFGLEDGEPCAhAQABiABBiKBRixAxiDARhDwgIQEC4YgAQYigUYsQMY1AIYQ8ICDhAuGK8BGMcBGLEDGIAEwgIFEC4YgATCAgsQLhiABBjHARivAcICBhAAGBYYHsICCxAAGIAEGIoFGIYDwgIFECEYoAHCAggQIRgWGB4YHeIDBBgAIEGIBgG6BgYIARABGAs&sclient=gws-wiz-serp

FMA dataset machine learning - Google Search
https://www.google.com/search?q=FMA+dataset+machine+learning&oq=FMA+dataset+machine+learning&gs_lcrp=EgZjaHJvbWUyBggAEEUYOTIKCAEQABiABBiiBDIKCAIQABiABBiiBDIKCAMQABiABBiiBNIBCDQwMjJqMGo0qAIAsAIA&sourceid=chrome&ie=UTF-8

GitHub - mdeff/fma: FMA: A Dataset For Music Analysis
https://github.com/mdeff/fma

Jupyter Notebook Viewer
https://nbviewer.org/github/mdeff/fma/blob/outputs/usage.ipynb

1612.01840.pdf
https://arxiv.org/pdf/1612.01840.pdf

converting .wav to spectrogram machine learning - Google Search

https://www.google.com/search?sca_esv=584187651&sxsrf=AM9HkKmdJkmV6Ffy9DwRQ6MNhu_Id9bMSw:1700540376863&q=converting+.wav+to+spectrogram+machine+learning&spell=1&sa=X&ved=2ahUKEwje9NrIntSCAxUdAzQIHSIMC1UQBSgAegQICBAC&biw=1440&bih=783&dpr=2

An Introduction to Statistical Machine Learning: The Crucial Role of Statistics in Modern Technology | DataCamp
https://www.datacamp.com/tutorial/unveiling-the-magic-of-statistical-machine-learning

t-test machine learning python - Google Search
https://www.google.com/search?q=t-test+machine+learning+python&sca_esv=584193398&sxsrf=AM9HkKmflu-H1j0t2HgJpxkQ2qBF4uMqLg%3A1700542318533&ei=bjdcZfeZIMyE0PEPxo-5kAc&oq=how+to+use+statistical+tests+for+ml+model+keras&gs_lp=Egxnd3Mtd2l6LXNlcnAiL2hvdyB0byB1c2Ugc3RhdGlzdGljYWwgdGVzdHMgZm9yIG1sIG1vZGVsIGtlcmFzKgIIAzIKEAAYRxjWBBiwAzIKEAAYRxjWBBiwAzIKEAAYRxjWBBiwAzIKEAAYRxjWBBiwAzIKEAAYRxjWBBiwAzIKEAAYRxjWBBiwAzIKEAAYRxjWBBiwA0jHIlAAWABwAngBkAEAmAEAoAEAqgEAuAEByAEA4gMEGAAgQYgGAZAGCA&sclient=gws-wiz-serp#ip=1

what statistical test to use when comparing two machine learning models? - Google Search
https://www.google.com/search?q=what+statistical+test+to+use+when+comparing+two+machine+learning+models%3F&sca_esv=584193398&sxsrf=AM9HkKmlYf_5bhVMtYE7rLTNGvUvSahfTA%3A1700542432749&ei=4DdcZdewLY2y0PEPi6WJoAg&ved=0ahUKEwjXoISdptSCAxUNGTQIHYtSAoQQ4dUDCBA&uact=5&oq=what+statistical+test+to+use+when+comparing+two+machine+learning+models%3F&gs_lp=Egxnd3Mtd2l6LXNlcnAiSHdoYXQgc3RhdGlzdGljYWwgdGVzdCB0byB1c2Ugd2hlbiBjb21wYXJpbmcgdHdvIG1hY2hpbmUgbGVhcm5pbmcgbW9kZWxzP0jCcFCFB1ivbnACeAGQAQGYAclBoAH5R6oBBTI2LjU4uAEDyAEA-AEBqAIUwgIHECMY6gIYJ8ICFhAAGAMYjwEY5QIY6gIYtAIYjAPYAQHCAhYQLhgDGI8BGOUCGOoCGLQCGIwD2AEBwgILEAAYgAQYigUYkQLCAgsQABiABBixAxiDAclCERAuGIAEGLEDGIMBGMcBGNEDwgIOEC4YgAQYigUYsQMYgwHCAgQQIxgnwgIKEAAYgAQYigUYQ8ICDhAAGIAEGIoFGLEDGIMBwgIFEAAYgATCAggQLhiABBixA8ICCxAAGIAEGIoFGLEDwgIKEAAYgAQYFBiHAsICERAuGIAEGIoFGLEDGIMBGJECwgIOEC4YgAQYsQMYxwEY0QPCAgQQABgDwgIFEC4YgATCAgsQABiABBiKBRiGA8ICBhAAGBYYHsICBRAhGKABwgIKECEYFhgeGA8YHcICBxAhGKABGArCAgQQIRgK4gMEGAAgQYgGAboGBggBEAEYCw&sclient=gws-wiz-serp#ip=1

machine learning - Comparing two models with statistical testing - Cross Validated
https://stats.stackexchange.com/questions/347256/comparing-two-models-with-statistical-testing

machine learning - Statistical significance when comparing two models for classification - Cross Validated
https://stats.stackexchange.com/questions/384466/statistical-significance-when-comparing-two-models-for-classification

machine learning - ML: Model comparison using statistical tests when testset is fixed - Cross Validated
https://stats.stackexchange.com/questions/451765/ml-model-comparison-using-statistical-tests-when-testset-is-fixed

Comparing Machine Learning Models: Statistical vs. Practical Significance - KDnuggets
https://www.kdnuggets.com/2019/01/comparing-machine-learning-models-statistical-vs-practical-significance.html

how to measure generalization of classification model machine learning - Google Search
https://www.google.com/search?q=how+to+measure+generalization+of+classification+model+machine+learning&sca_esv=584193398&sxsrf=AM9HkKkvFzlu8s0ZDRcRqZ5a80uNDWbzcA%3A1700543418804&ei=ujtcZbTWMKHf0PEP-YiTsAI&ved=0ahUKEwi0m5zzqdSCAxWhLzQIHXnEBCYQ4dUDCBA&uact=5&oq=how+to+measure+generalization+of+classification+model+machine+learning&gs_lp=Egxnd3Mtd2l6LXNlcnAiRmhvdyB0byBtZWFzdXJlIGdlbmVyYWxpemF0aW9uIG9mIGNsYXNzaWZpY2F0aW9uIG1vZGVsIG1hY2hpbmUgbGVhcm5pbmdlRRQqwRYthJwAXgBkAEAmAHKAaAB8gugAQYxLjEwLjG4AQPIAQD4AQHCAgoQABhHGNYEGLADwgIHECMYsAIYJ8ICCBAhGKABGMMEwgIKECEYoAEYwwQYCuIDBBgAIEGIBgGQBgg&sclient=gws-wiz-serp#ip=1

notes09.pdf
https://www.cs.toronto.edu/~lczhang/321/notes/notes09.pdf

machine learning - By which ways can we, in principle, evaluate whether a model succeeded in generalizing? - Cross Validated
https://stats.stackexchange.com/questions/224014/by-which-ways-can-we-in-principle-evaluate-whether-a-model-succeeded-in-genera