Can machine find the connection between music and concentration?

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1. Motivation, purpose

Many people believe that "listening to music while working" is not efficient. On the other hand, there is also music that helps you concentrate. If music could be mechanically classified as either enhancing or hindering concentration, it could be easily utilized to improve work efficiency during tasks like studying.
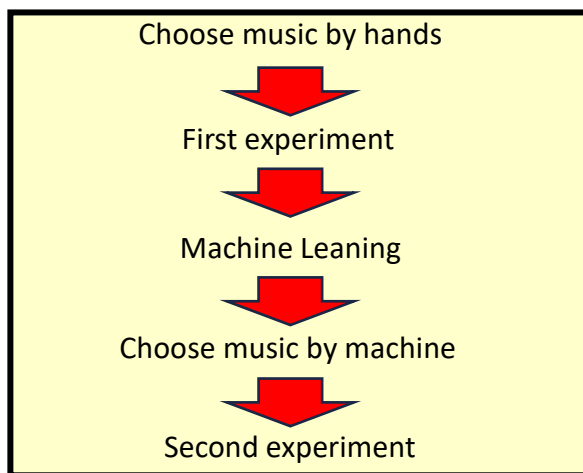
2. Previous research

There are several previous studies that classify the emotions of music using machine learning, but there has been very little research attempting to analyze it in the area of concentration.
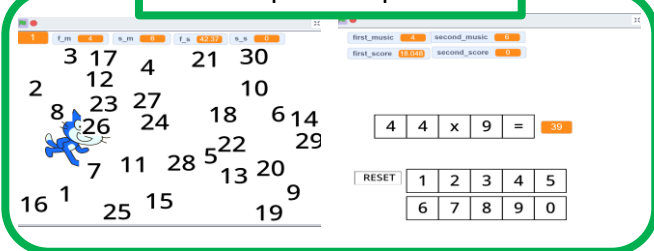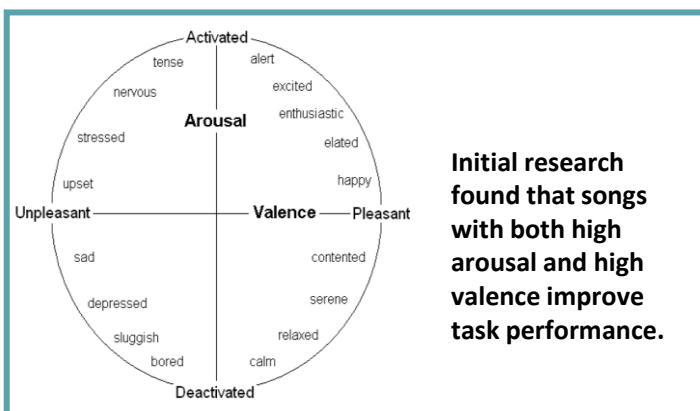
↓Example for mood classification

https://cs229.stanford.edu/proj2011/GoelPadial-MusicMoodClassification.pdf

3. The flow of research

Choose music by hands

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First experiment

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Machine Leaning

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Choose music by machine

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Second experiment

An example of experiment

4. The result of the research

Initial research found that songs with both high arousal and high valence improve task performance.

In the second study, the results were as follows:
Machine said that is suitable for concentration

1:0.941173
2:0.993002
No song:1.004872
3:1.147472
4:1.077545

Machine said that is NOT suitable for concentration

A lower score is good

5. Our thought

Looking at the results of the study, the songs selected by the machine affected human concentration almost exactly as expected.
This suggests that the machine was able to discover how music influences human concentration.
Furthermore, it is suggested that machine learning is capable of both 'finding music suitable for concentration' and 'determining whether music is suitable for concentration.'

6. Conclusion, for the future

This study is considered to have potential applications in various research areas in that it discovered the effects of music on humans. For example, it could be applied to research on behavioral changes, such as what kind of emotions are generated in the human brain when listening to music and what actions are encouraged as a result.

7.References

Russell, J. A. (1980). *A Circumplex Model of Affect*. Journal of Personality and Social Psychology

https://cvml.unige.ch/databases/DEAM/