

CS 757
Spring 2025
Assignment 1

Due February 17th. Before 4:30pm.

You can do this in teams of up to two people.

Your job in this assignment is to design, implement, and use a Variational Autoencoder to generate music in a category of your choice (e.g., classical). You should utilize the dataset in <https://www.kaggle.com/code/basu369victor/generate-music-with-variational-autoencoder>

and a Variational Autoencoder, modeled after the ones you utilized in the VAE activities. (For example you can model it after ResNet.) Just remember you are not dealing with 2D images, but 1D signals, so you need to use 1D layers.

Train the model and then use it to generate some samples.

Change your code to implement a better variation of VAE, generate new output.
Give a qualitative assessment of the two models in your report.

What to submit:

Set up a directory Assignment 1, and put the following under it:

- A src subdirectory with all your code.
- A **report** in PDF. (**Submissions without report will be heavily penalized.**)
- A subdirectory with the audio samples you generated.

Zip your main directory and give it the name CS757Assignment1[names_of_people_in_your_team].zip

Upload that zip file in Blackboard. One submission per team is enough.