PAT 498/598: Special Topics: Generative AI for Music and Audio Creation (Fall 2024)

Final Project

Project pitch in class on November 6 Proposal due at 11:59pm ET on November 22 Presentation in class on December 9 Final report due at 11:59pm ET on December 15

(Last updated on November 24, 2024)

1 Instructions

The final project is open-ended, and you may choose any topic you like that *involves some generative models*. You may work individually or in a group of two. The final project can take many formats. For example, you may reimplement an existing work, finetune a pretrained model on a different dataset, explore zero-shot generalization capability of an existing model, compare evaluation metrics for music and audio generative models, explore creative and performative use of pretrained models without training/finetuning them.

Suggestions and tips

- If you plan to train or finetune something, think about the "data & model" at the same time. You will need the right dataset and the right model to succeed.
- An active GitHub repository with many open/closed issues is usually a good sign.
- Always look for backup codebase so that you have a plan B. Any online repository is not guaranteed to work.
- The final project can be an extension of your Assignment 3 results, but you'll need to do many more extensions, explorations and analysis.

2 Milestones

There are two write-ups to hand in and two presentations in class. For the project pitch, you will introduce your ideas and talk about your high-level plans. You will then be provided

some feedback and explore more on the topic. You will then draft a short single-page proposal describing the findings of your survey and your plans, e.g., the dataset(s) you plan to use, the model(s) you plan to implement, the codebase(s) you plan to base on (you may also implement the model from scratch), the performance format you plan to experiment with (if you decide to focus on the creative/performative aspects). You will then work on your project and demonstrate your work in the last class of the semester. Finally, you will turn in a full three to five-page report that summarizes your method, results, analysis and discussions. You may use any template for your proposal and report.

- Project pitch (November 6): Topic and high-level plans
- Proposal (November 22): Survey and plans, 1 page excluding references
- Presentation (December 9): Showcase and oral presentation
- Final report (December 15): Full report, 3-5 pages excluding references

3 Rubrics

- Proposal (10pt)
- Presentation (20pt)
- Final report (30pt)
 - Implementation (10pt)
 - Code documentation (5pt)
 - Explanation of design and implementation (5pt)
 - Results, analysis and discussions (10pt)

4 Submission

- Please provide proper citations/references for any external resources you use in your writing and code.
- Please submit your work to Gradescope.
- Late submissions will *not* be accepted. You can always submit your work early and update it later.