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**CIS4930 Individual Coding Assignment**

**Spring 2023**

1. **Problem Statement**

*[The first step in any machine learning project is defining your problem. Here you need to present a high-level problem statement, which may include a description of the problem, why this problem needs to be solved, and how did you solve it.]*

1. **Data Preparation**

*[Preparing data for training machine learning models is a fundamental step. Describe your data preparation process in detail, which may include how did you clean the data and how did you extract features from the data for the following model training steps.]*

1. **Model Development**
   * Model Training
   * *[Describe the training phrase, which may include what models did you select, how you split training/validation/test sets, training epochs, and any other parameters.]*
   * Model Evaluation
   * *[Present the results of your models, basic evaluation looks at metrics such as* [*accuracy*](https://deepchecks.com/glossary/machine-learning-model-accuracy/)*,* [*precision*](https://deepchecks.com/glossary/precision-in-machine-learning/)*, or F1 score to determine which model is the best fit to solve the problem. You may find the model performance not good enough, in which case you can experiment further to improve the model performance with different features or more complex deep learning models.]*
2. **Discussion**
   * *[Does your model perform well enough? Discuss the potential reasons that your model fixes the problem well or not]*
   * *[What are the challenges you met during both the data preparation and model development processes? How did you solve them?]*
   * *[Any reflections or thoughts on this assignment?]*
3. **Appendix**
   * *Repository Link:* [*https://github.com/npgilman/MachineLearningAudioModalities*](https://github.com/npgilman/MachineLearningAudioModalities)
   * *Librosa landing page:* [*https://librosa.org/doc/main/index.html*](https://librosa.org/doc/main/index.html)