

**HeartLab AI Technical Test**

Your task in this project is to implement a model which can classify chest x-rays as normal, Bacterial Pneumonia, or Viral Pneumonia. You will also be writing up to 2 pages containing a summary of your approach, any bias, limitations, or assumptions you made and what you did to overcame or handle them.

**Structure**

The data for this project can be found in ‘chest\_xray/’ and is already split into normal and pneumonia sets. Feel free to have your own sample of training and test sets. The name of the pneumonia class (viral, bacterial) is contained within the name of the image file.

A requirements.txt file should be provided in this directory with all packages required to run your model. All code should be stored in ‘src/’ and all tests should be stored in ‘test/’. Skeleton code has been provided in ‘src/{model.py/main.py}’ for you. You can use any model already implemented, such as ResNet or implement your own one.

**Additional Information**

The goal of this project is NOT achieving a high accuracy. Anything over 70% will be judged equally. You can use any method to train the model, results can be presented as graphs, or other means.

You can write code in any language, Python preferred.

Remember to write tests for all functions, assumptions, and limitations you create.

You can assume any unseen data will be an image of a chest x-ray of random size.

**Deliverables**

The deliverable of this project is the source code in either a zip archive, or a public git repository, i.e., GitHub, GitLab etc.

A document containing a summary of the method used and reasoning behind decisions made including identifying and overcoming biases, limitations, and assumptions. Also include some results from your training and a discussion about the results.

Don’t forget to add your own unit tests and model evaluation tests.

**Questions**

At any point, feel free to reach out to me and I will do my best to assist you!