

Team Contributions: POC CXR

Team 27, Neuralyzers

Ayman Akhras

Nathan Luong

Patrick Zhou

Kelly Deng

Reza Jodeiri

This document summarizes the contributions of each team member up to the POC Demo. The time period of interest is the time between the beginning of the term and the POC demo.

1 Demo Plans

The POC demo will showcase the end-to-end functionality of our Chest X-Ray analysis app, including Docker containerization, model-based disease prediction, and CI/CD automation. We'll start with the front-end where users upload X-ray images, then move to the backend where images are normalized, processed through a pre-trained TorchXRyVision model, and a disease label is returned. The key features are:

- Docker containerization: Docker: Consistent environments for front-end, backend, and model and use of docker compose to orchestrate the services.
- Model-based disease prediction: Model Prediction: pretrained model for X-ray disease detection.
- UI : User-friendly interface for uploading X-ray images.
- Modular backend: a modular backend that can be easily extended to support additional models for disease prediction.
- CI/CD Pipeline: Automated testing and deployment with GitHub Actions.

2 Team Meeting Attendance

Student	Meetings
Total	9
Ayman Akhras	7
Kelly Deng	9
Patrick Zhou	8
Nathan Luong	9
Reza Jodeiri	9

- As we divided the team into subteams for developing the different components of the project; therefore, some members were not required to attend all meetings.

3 Supervisor/Stakeholder Meeting Attendance

Student	Meetings
Total	2
Ayman Akhras	1
Kelly Deng	2
Patrick Zhou	2
Nathan Luong	2
Reza Jodeiri	2

- Ayman missed one of the meetings due to sickness.
- We are currently following a montly meeting schedule with our supervisor, Dr.Moradi.

4 Lecture Attendance

Student	Lectures
Total	11
Ayman Akhras	7
Kelly Deng	8
Patrick Zhou	8
Nathan Luong	9
Reza Jodeiri	5

- Most team members were not able to attend the lecture on VNV-Plan as there was a SFWRENG 4X03 midterm scheduled right after lecture.
- Reza is on a co-op term and was not able to attend all lectures as the lectures were scheduled during his work hours.
- Ayman missed a few lectures due to illness.

5 TA Document Discussion Attendance

Student	Meetings
Total	3
Ayman Akhras	3
Kelly Deng	3
Patrick Zhou	3
Nathan Luong	3
Reza Jodeiri	3

6 Commits

Student	Commits	Percent
Total	131	100%
Ayman Akhras	15	11%
Kelly Deng	20	15%
Patrick Zhou	20	15%
Nathan Luong	24	18%
Reza Jodeiri	52	41%

These are approximate values as there are unmerged branches that have not been accounted for.

7 Issue Tracker

Student	Authored (O+C)	Assigned (C only)
Ayman Akhras	0	19
Kelly Deng	0	19
Patrick Zhou	1	19
Nathan Luong	2	22
Reza Jodeiri	23	26

8 CICD

Our project uses GitHub Actions for continuous integration and deployment and the pipeline is triggered on every push to the repository. The pipeline runs the tests and deploys the application. Here is what the pipeline does:

- Builds the Docker image: Creates a Docker image for the application using the latest code and configuration, ensuring a consistent runtime environment for testing and deployment..
- Runs unit tests: Executes all unit tests to validate individual components of the application, ensuring that new changes don't break existing functionality.
- Applies code quality checks using linters and static analysis tools such as Pylint to enforce coding standards and detect potential issues, which helps maintain readability and consistency across the codebase.
- Deploys the Docker image to our registry, allowing developers to access latest stable version of the application after all tests pass successfully.