

Experience Report

Hello

My name is Aniket Kumar and I worked on an object detection project using a Faster R-CNN model. I used the Pascal VOC 2007 dataset to train my model. It helped me find different objects like cars, bikes, people, and animals in pictures.

Challenges I Faced

The biggest problem was training time. Even though I used a GPU on Google Colab, one training round called an epoch took around 40 to 50 minutes. This felt like a very long time. I also got confused if my laptop GPU was working properly when I ran the code in VS Code.

Another challenge was fixing errors. Sometimes the data loader gave errors and the program crashed. It was scary at first. I had to look at the error messages and try different things to make it work.

How I Used AI Tools

I used ChatGPT to help me write and fix my code. I asked how to load the dataset, how to use the model, and how to check if my results were correct. I also used it when errors happened or when I was not sure how to do something. ChatGPT gave me answers and full code that I copied and tested. If something did not work, I asked again with better questions.

I also used ChatGPT to understand how the code worked. I tried not to just copy but to change the code and see what happened.

What I Learned

I had already worked on object detection before using the YOLO model for the Myeloma project, so this time I wanted to try a different method. This project helped me understand how the Faster R-CNN model works. I got better at reading and understanding metrics like mAP, precision, and recall. I also handled how to move images and labels to the GPU and learned the reason for using batch loading and special functions like `collate` to match images with their targets.

One of the most useful things was learning how to ask the right questions to AI tools and understand the code they give back. This made solving problems easier and helped me build the full pipeline step by step with more confidence.

What Surprised Me

I was surprised that training takes a lot of time even when using a GPU. I thought it would be fast but it is not like that. Also, I found out that sometimes Google Colab is faster than my own laptop GPU.

Another surprise was how useful ChatGPT was. It helped me solve many problems and explained things in a way I could understand.

Writing Code Myself or Using AI

I already knew about ChatGPT before starting this project. I used it when I was stuck or did not know how to begin. Sometimes it gave me the full code, which was helpful. But I did not just copy it. I

made sure to understand what each part was doing. I feel this way is better because it helps me learn and stay confident. AI is a great tool if we use it to understand, not just to finish work quickly.

Suggestions to Improve This Assignment

Please make the dataset smaller or training faster so we can try things quickly. Also, a checklist would help to show all the steps like load data, build model, train, test, and check results. Giving GPU time or Colab Pro access would also help students like me who have slow laptops.

Thank you for this project. It was hard to run fast in my laptop but fun and I learned a lot.

From

Aniket Kumar