

## HW4 Report

### Accuracy result for each part:

Part	Dev accuracy	Eval accuracy
P1	0.8767	0.7667
P2	0.2954	0.0871
P3	0.7596	0.5704
P4	0.8471	0.7092
P5	0.7929	0.6504

### P3. If both accuracies are better than question (II), explain why?

As show in the result, both accuracy is better than in part2. Because after doing the LDA, it will reduce the data load dimension. The rest of the information after the LDA is the most important information. As we both reduce the data load and not reduce the important information, the accuracy will undoubtedly improve. This step is like masking, leaving important information, shielding irrelevant information, and improving the accuracy while improving the operation speed.

### P5. Compare your results with previous ones.

For the gaussian classifier, the final accuracy of dev and eval set is shown in the table. As a compare, the accuracy is lower than P1 and P4 but higher than P2 and P3. The low accuracy reason in this part may cause by the gaussian distribution not always a normal distribution in every part. As this result, it will decrease the accuracy in final. However, it's performance is still better than the part2.