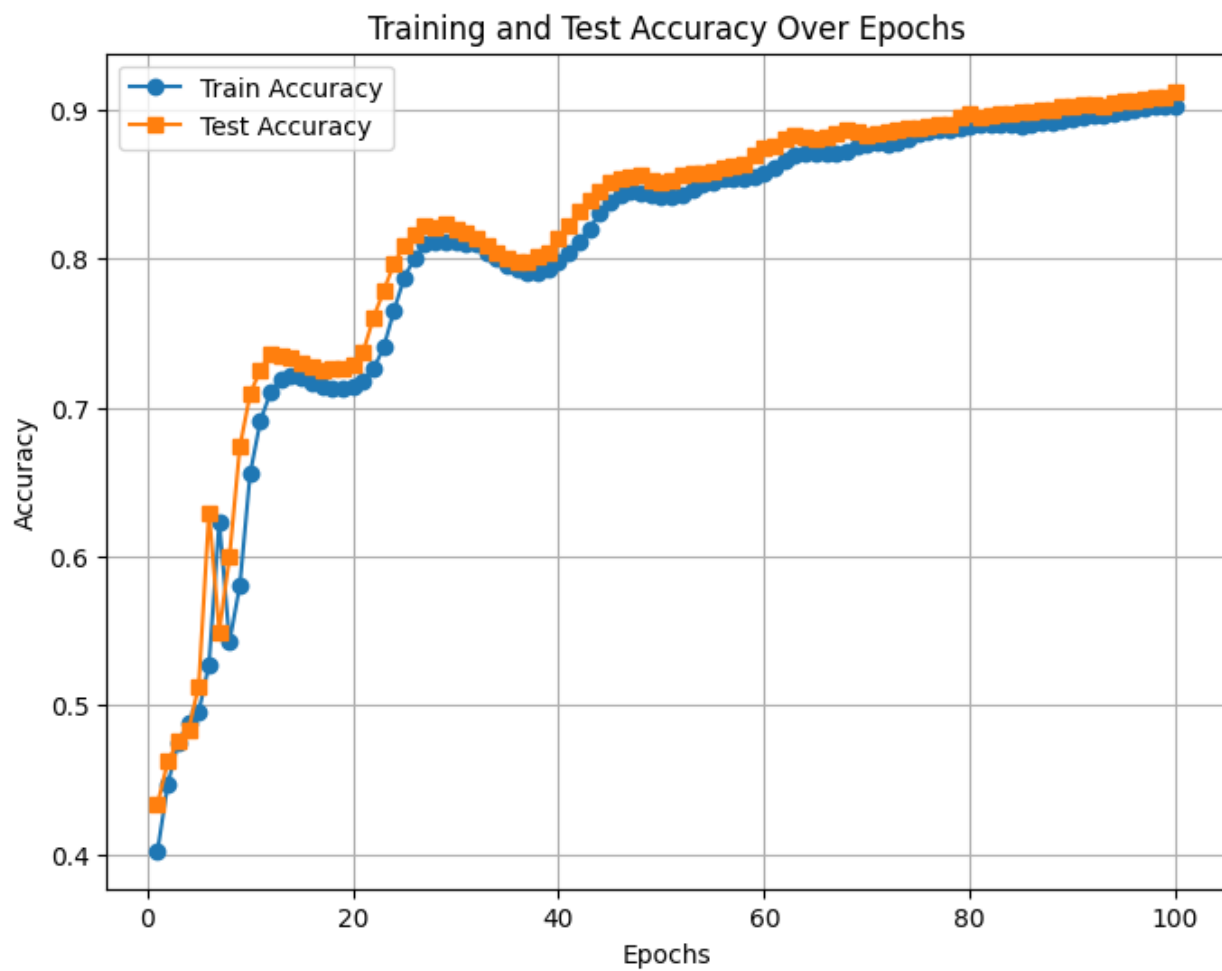
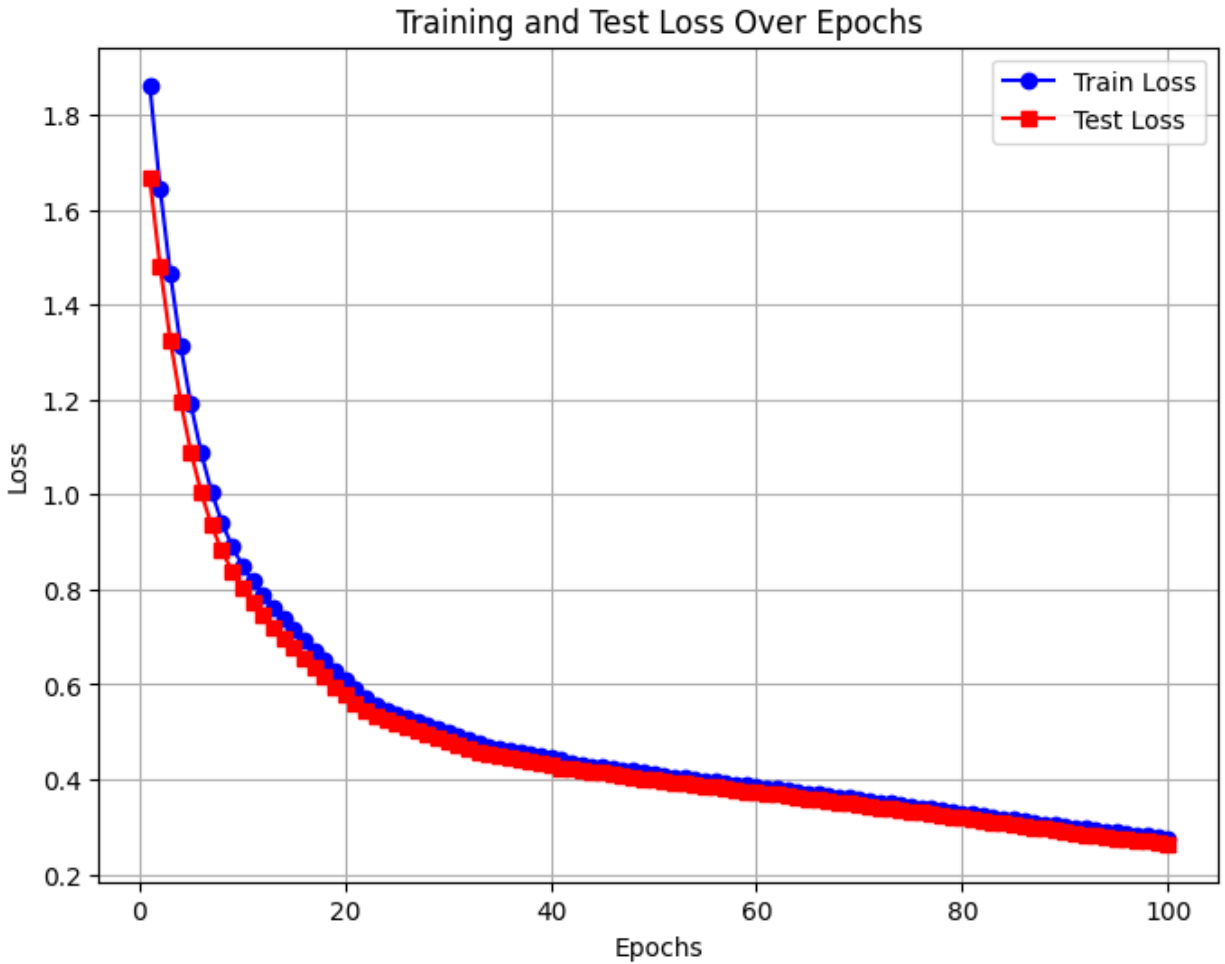


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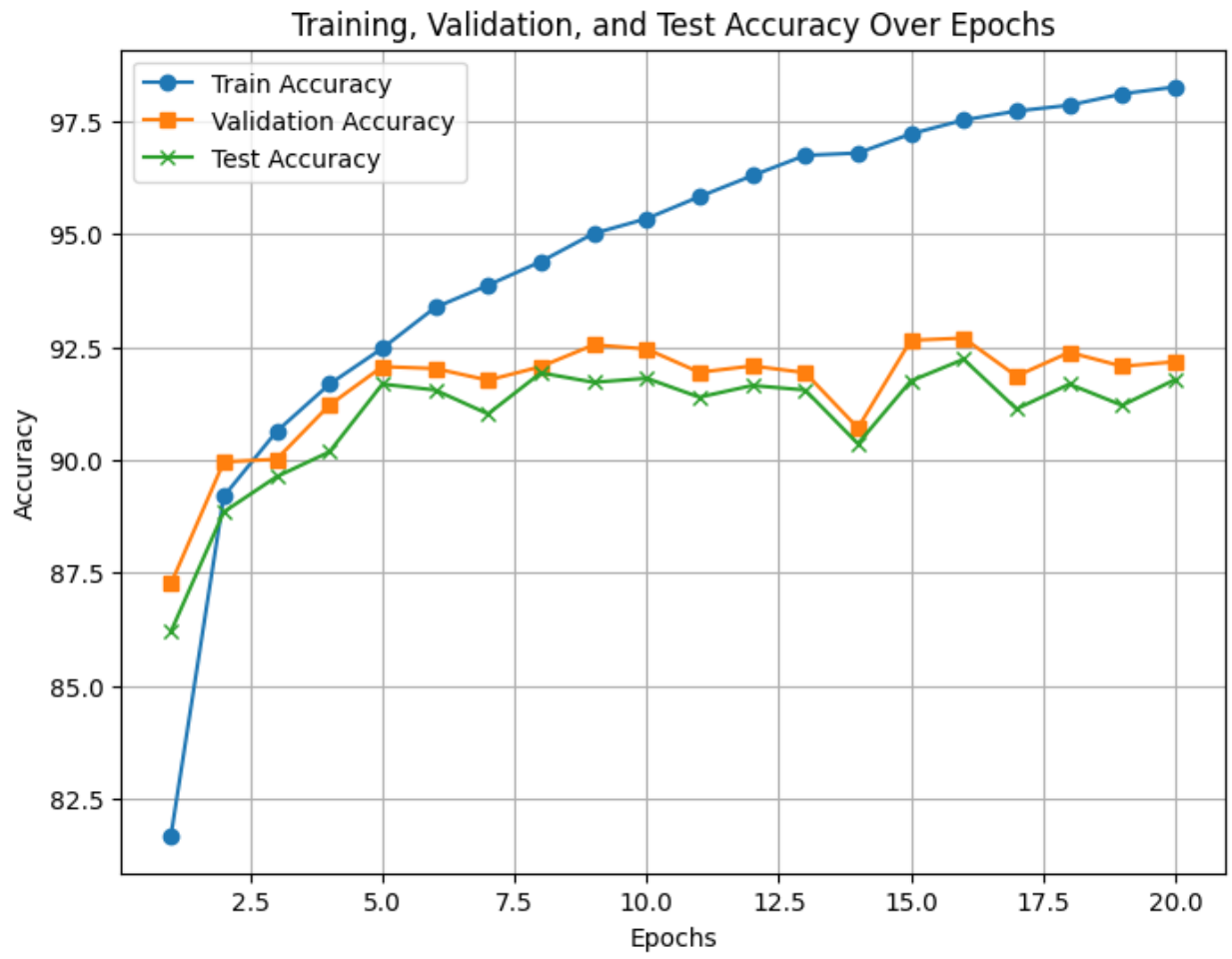
# Project 2 Report

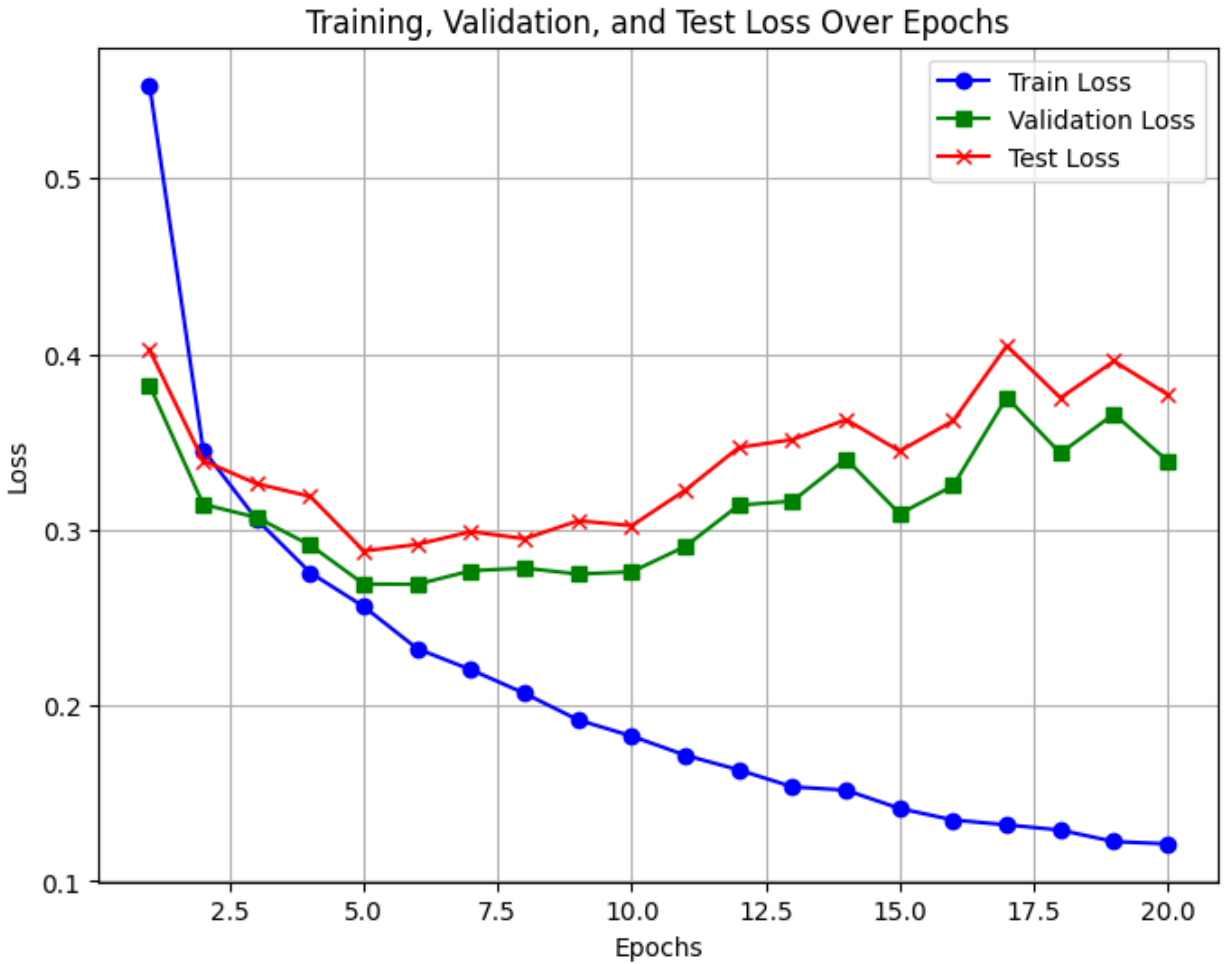




For the implementation of the simple classification model, I would argue that for the first 10-25 Epochs, the values returned for accuracy follow the expected model. The first graph clearly shows a “wavy” pattern that is indicative of good stepping. Where around 50 epochs and on I would argue that there begins to be evidence of overfitting. This is also evident in the loss graph as after ~50 epochs there is a transition to a linear-like model instead of an exponential decay-like graph. Because of these visual arguments, I would say that the convergence performance of the model is highly optimized, and the step size is reasonably balanced with minimal execution time in comparison to model convergence. In other words, the steps are large enough that the model doesn’t run for ages while being small enough to find an accurate conversion.

2)





In the vision portion of this assignment, there are significantly fewer epochs due to the computational load of this program. Even with optimization steps taken 5 epochs take 2min, as such I suspect that this model is likely underfitted as the convergence seems almost too fast, reaching the target accuracy within 4 epochs. As such I ran for additional epochs (20) taking 8 min, to see if there were any discrepancies. To my surprise it seems that the accuracy really does “top out” around 5 epochs, meaning that the convergence of this model is either extremely lucky or incorrect. Looking at the loss results it seems that past 5 the loss models of Validation and Test diverge and grow, instead of following the continued pattern of decay like train. The loss plot is the one we want to follow to track overfitting, however, based on the presented model vs train it appear the model is under fitted