



# Report: Deep learning final project (miniprojects)

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## Abstract

This is a report on the solution of the two mini projects proposed as a final project for the course Deep Learning (14X050). The solutions consists of this report and a GitHub archive containing the corresponding code ([Github Archive](#))

## Project 1

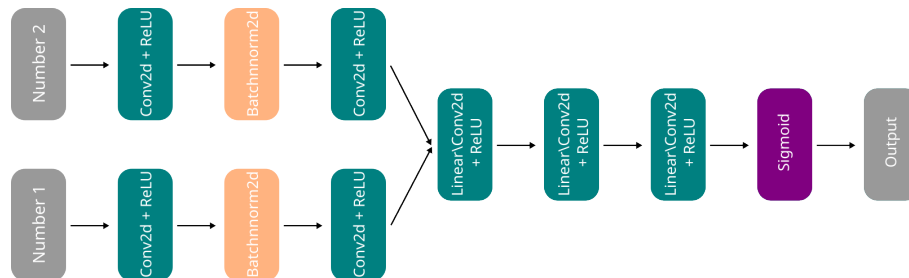


Figure 1: Diagrammatic visualization of the architecture for the simple network. (figure made using Inkscape)

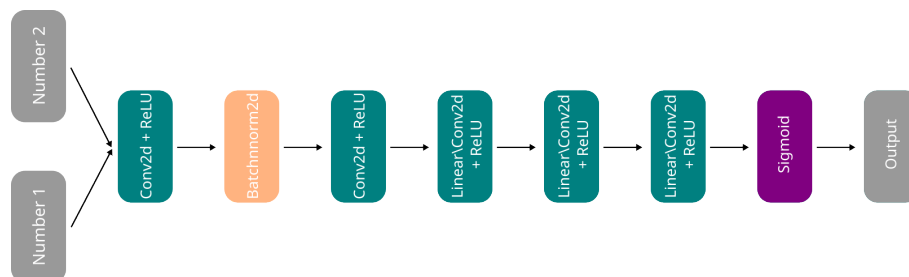


Figure 2: Diagrammatic visualization of the architecture for the weight sharing network.(figure made using Inkscape)

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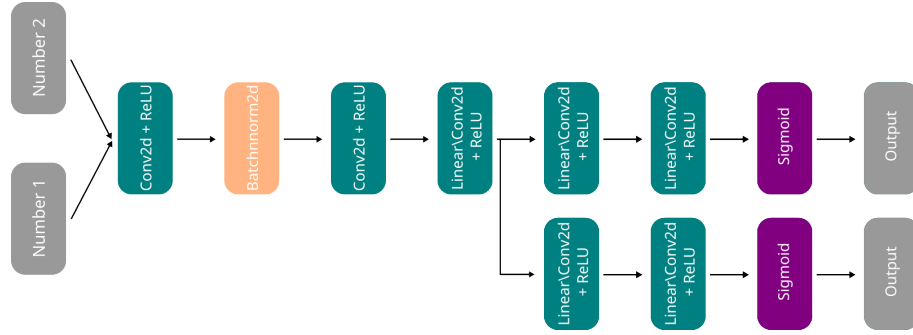


Figure 3: Diagrammatic visualization of the architecture for the simple auxiliary neural network.(figure made using Inkscape)

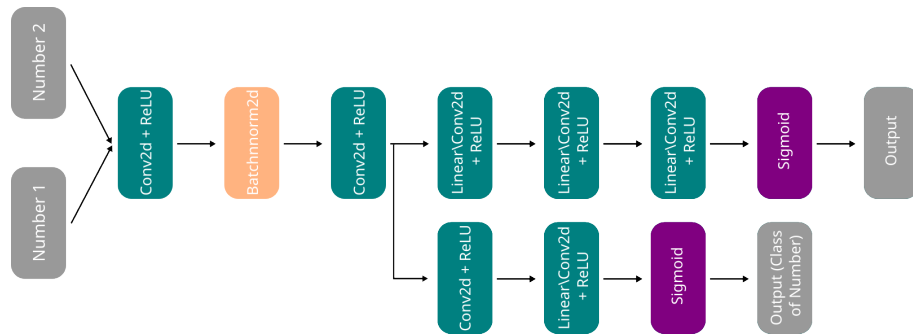
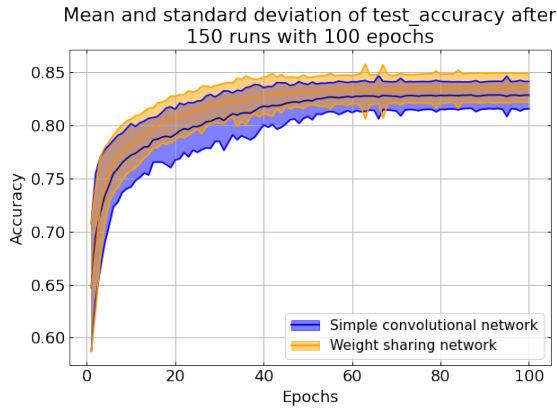
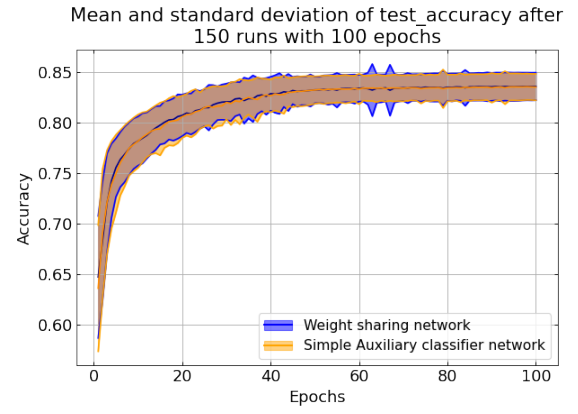


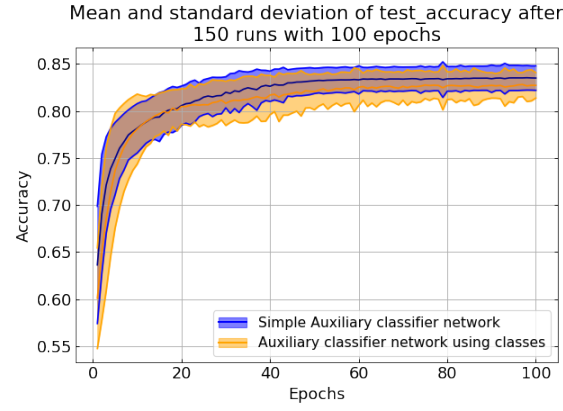
Figure 4: Diagrammatic visualization of the architecture for the auxiliary neural network using the numbers classes. (figure made using Inkscape)



(a) Simple network

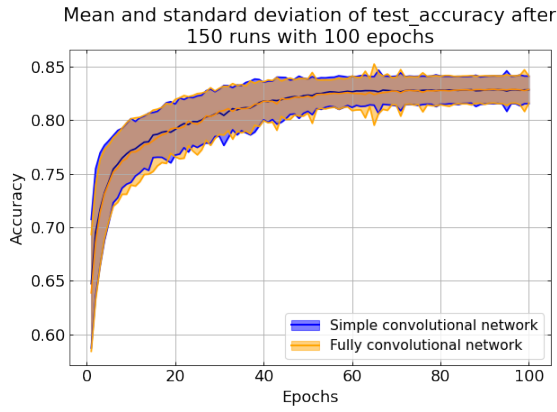


(b) Weight sharing network

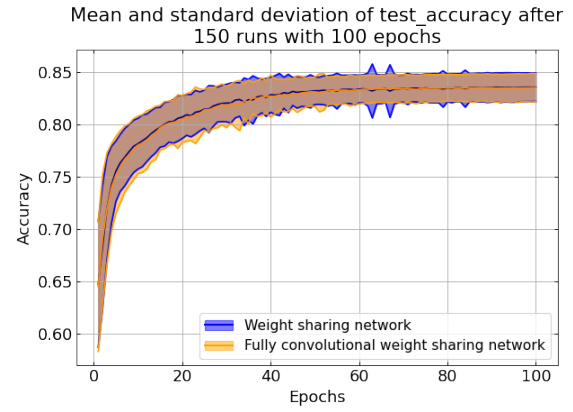


(c) Simple auxiliary classifier network

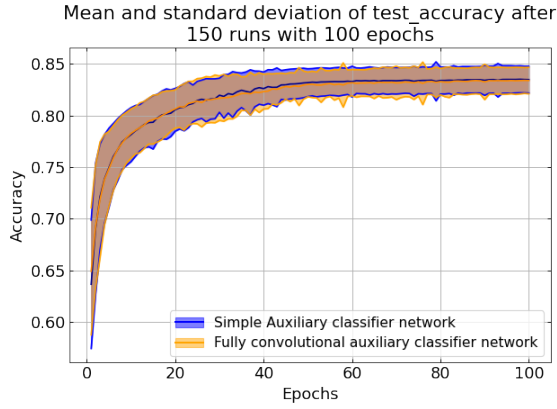
Figure 5: The average and standard deviation of critical parameters: Region R4



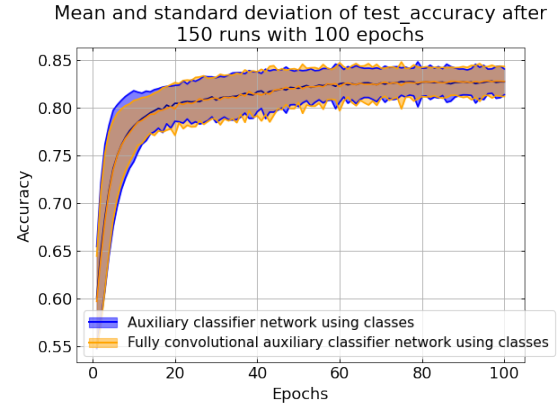
(a) Simple network



(b) Weight sharing network

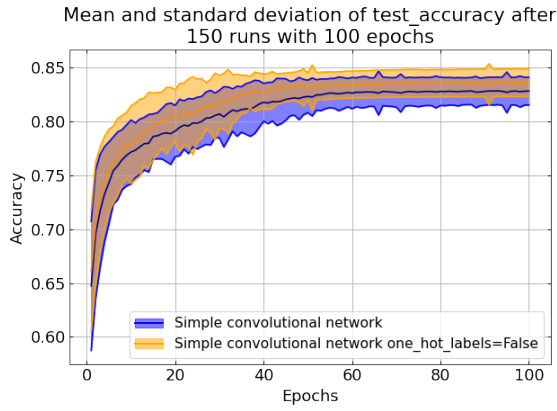


(c) Simple auxiliary classifier network

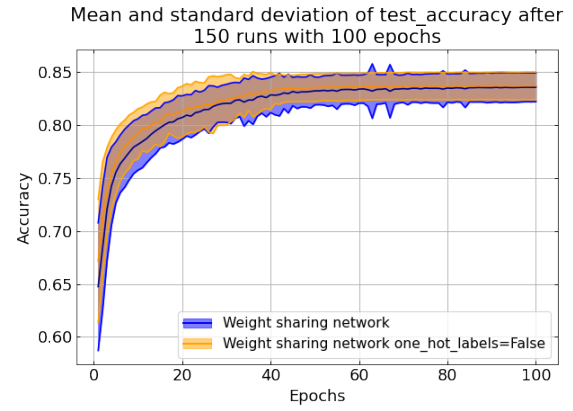


(d) Auxiliary classifier network (number classes)

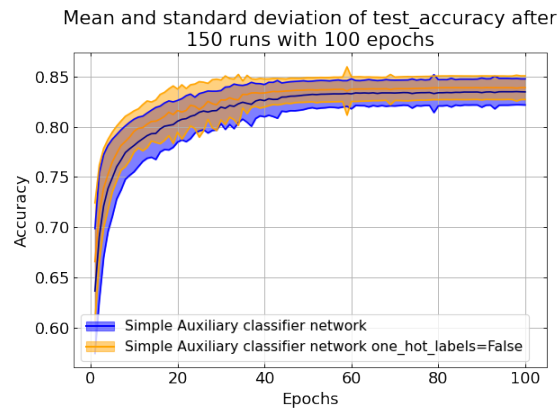
Figure 6: The average and standard deviation of critical parameters: Region R4



(a) Simple network

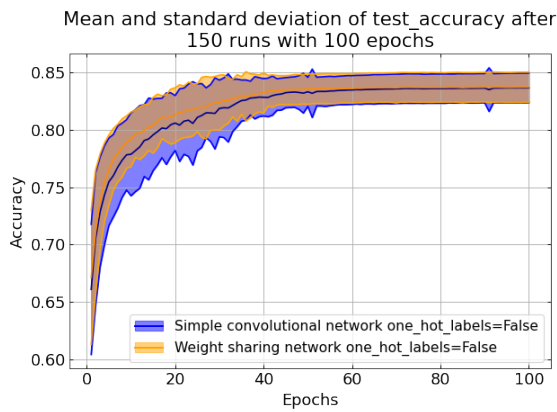


(b) Weight sharing network

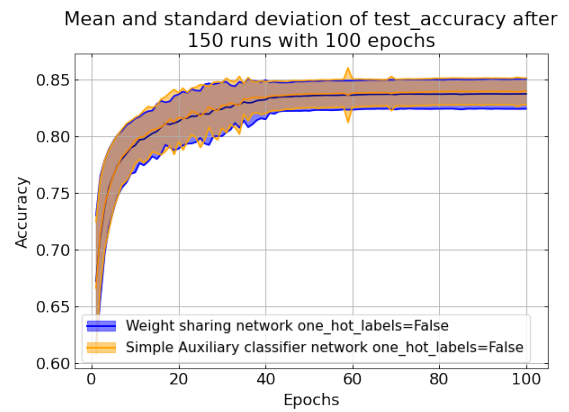


(c) Simple auxiliary classifier network

Figure 7: The average and standard deviation of critical parameters: Region R4



(a) Simple network



(b) Weight sharing network

Figure 8: The average and standard deviation of critical parameters: Region R4