**Results of the neural network with the optimised architecture. 4 hidden layers of 50 neurons each. Learning rate = 0.01 for 25 epochs, then 0.003 for 35 epochs and finally 0.001 for 20 epochs. Optimiser = ‘Adam’. Input layer 6159 neurons, output layer 306 neurons. Activation function is sigmoid for the output layer and ReLU for the rest.**

**Experiment 1**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | SUBSET 1 | SUBSET 2 | SUBSET 3 | SUBSET 4 | SUBSET 5 | AVERAGE |
| TOP 1 | 19.90 | 21.84 | 22.82 | 22.33 | 23.79 | **22.14** |
| TOP 3 | 33.01 | 31.55 | 31.07 | 30.10 | 33.01 | **31.75** |
| TOP 5 | 35.44 | 36.41 | 36.41 | 34.95 | 38.35 | **36.31** |
| TOP 10 | 45.15 | 45.63 | 47.09 | 44.66 | 48.06 | **46.12** |
| TOP 25 | 64.56 | 58.74 | 62.14 | 62.62 | 61.17 | **61.85** |

**Experiment 2**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | SUBSET 1 | SUBSET 2 | SUBSET 3 | SUBSET 4 | SUBSET 5 | AVERAGE |
| TOP 1 | 26.21 | 24.76 | 16.02 | 20.39 | 26.70 | **22.82** |
| TOP 3 | 37.86 | 30.58 | 24.76 | 30.10 | 35.92 | **31.84** |
| TOP 5 | 45.63 | 35.44 | 33.50 | 37.38 | 42.23 | **38.84** |
| TOP 10 | 57.77 | 47.09 | 46.12 | 47.57 | 53.88 | **50.49** |
| TOP 25 | 72.82 | 59.71 | 60.68 | 63.11 | 67.96 | **64.86** |

**Experiment 3**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | SUBSET 1 | SUBSET 2 | SUBSET 3 | SUBSET 4 | SUBSET 5 | AVERAGE |
| TOP 1 | 35.92 | 18.45 | 16.02 | 22.82 | 21.84 | **23.01** |
| TOP 3 | 45.63 | 28.16 | 27.67 | 32.04 | 31.07 | **32.91** |
| TOP 5 | 50.49 | 33.98 | 35.92 | 38.83 | 37.38 | **39.32** |
| TOP 10 | 57.28 | 43.20 | 45.63 | 49.03 | 51.46 | **49.32** |
| TOP 25 | 67.48 | 57.28 | 59.22 | 66.50 | 63.59 | **62.81** |

**Average**

|  |  |
| --- | --- |
|  | FINAL AVERAGE |
| TOP 1 | **22.66** |
| TOP 3 | **32.17** |
| TOP 5 | **38.16** |
| TOP 10 | **48.64** |
| TOP 25 | **63.17** |