CS 797O: Neural Nets and Deep Learning Unit 2: Assignment 4- Neuralworks Part 2 Digits Network

Abu Tyeb Azad
WSU ID: Q688C867

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1 Configuration 3: 441/50/10

No. of Hidden Layers Used = 1 (Hid 1)
No. of Neurons in Hidden Layer 1 = 50
Learn Rule = Delta
Transfer Function = Sigmoid

1.1 Network Training

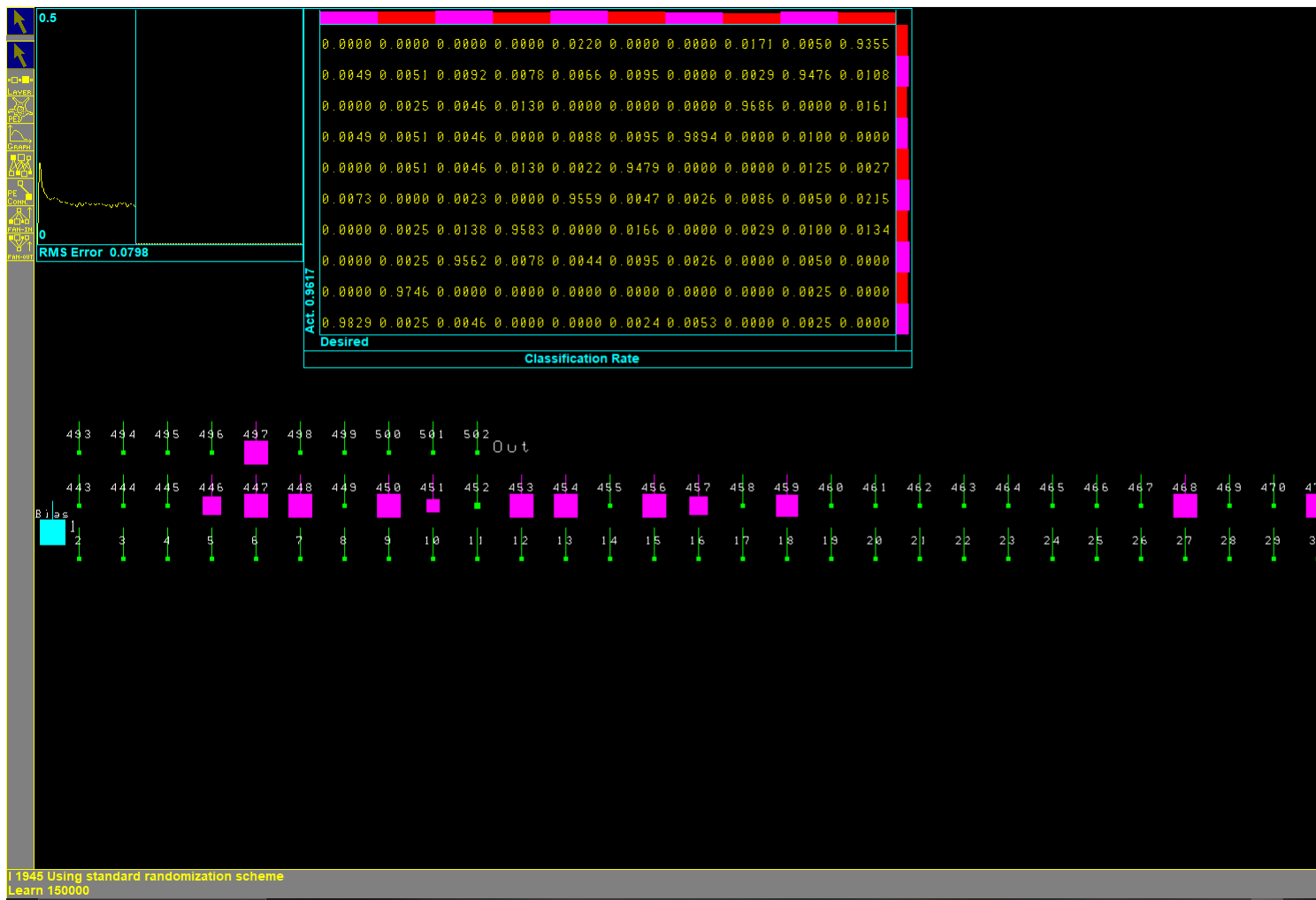Training RMS Error = 0.0798
Training Classification Rate = 0.9617

Figure 1: Configuration 3 Training

1.2   Network Testing

Testing RMS Error = 0.0881
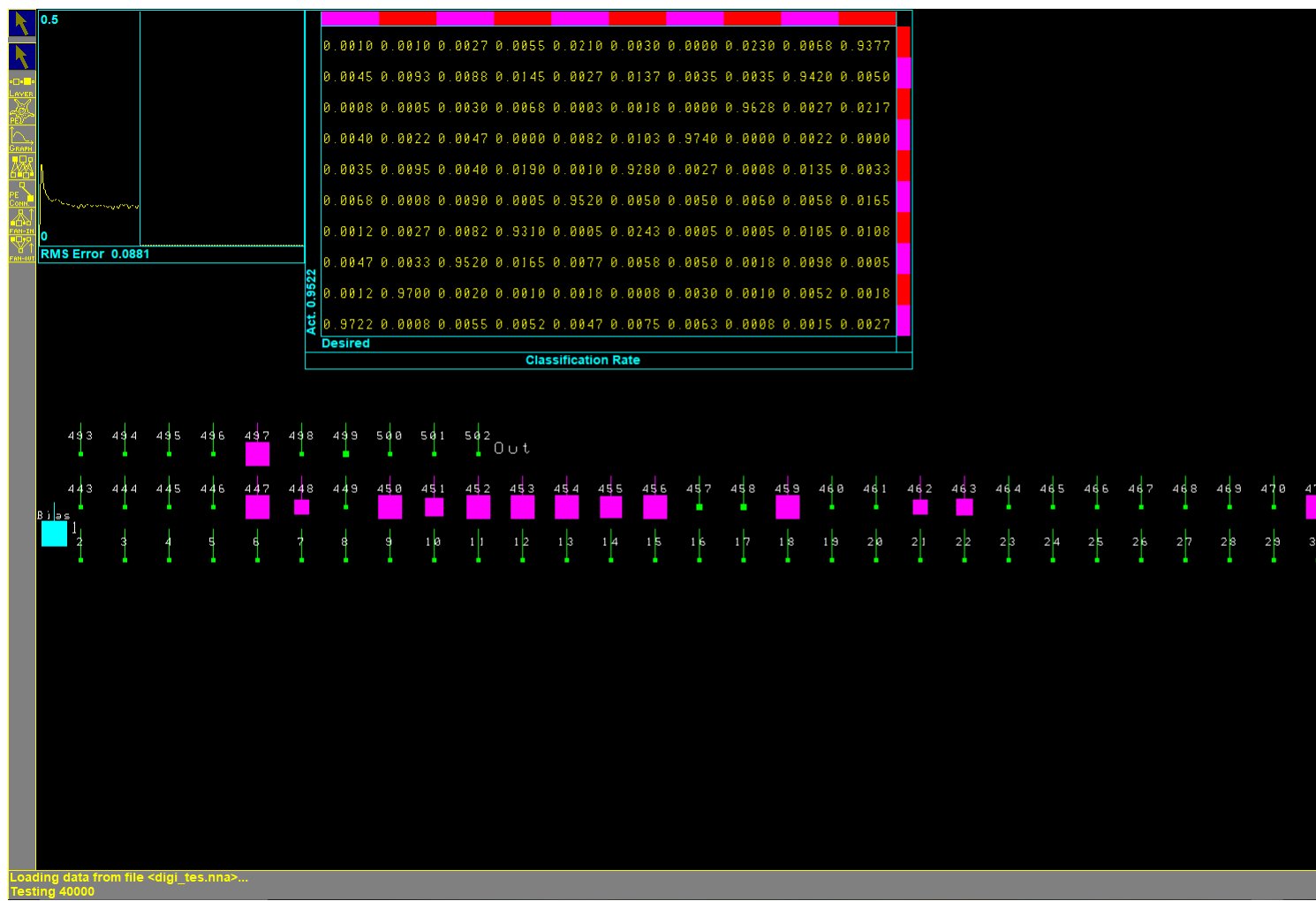Testing Classification Rate = 0.9522

0.5

RMS Error 0.0881

0.0010 0.0010 0.0027 0.0055 0.0210 0.0030 0.0000 0.0230 0.0068 0.9377

0.0045 0.0093 0.0088 0.0145 0.0027 0.0137 0.0035 0.0035 0.9420 0.0050

0.0008 0.0005 0.0030 0.0068 0.0003 0.0018 0.0000 0.9628 0.0027 0.0217

0.0040 0.0022 0.0047 0.0000 0.0082 0.0103 0.9740 0.0000 0.0022 0.0000

0.0035 0.0095 0.0040 0.0190 0.0010 0.9280 0.0027 0.0008 0.0135 0.0033

0.0068 0.0008 0.0090 0.0005 0.9520 0.0050 0.0050 0.0060 0.0058 0.0165

0.0012 0.0027 0.0082 0.9310 0.0005 0.0243 0.0005 0.0005 0.0105 0.0108

0.0047 0.0033 0.9520 0.0165 0.0077 0.0058 0.0050 0.0018 0.0098 0.0005

0.0012 0.9700 0.0020 0.0010 0.0018 0.0008 0.0030 0.0010 0.0052 0.0018

0.9722 0.0008 0.0055 0.0052 0.0047 0.0075 0.0063 0.0008 0.0015 0.0027

Act. 0.9522

Desired

Classification Rate

493 494 495 496 497 498 499 500 501 502 Out

443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 47

Bias 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 3

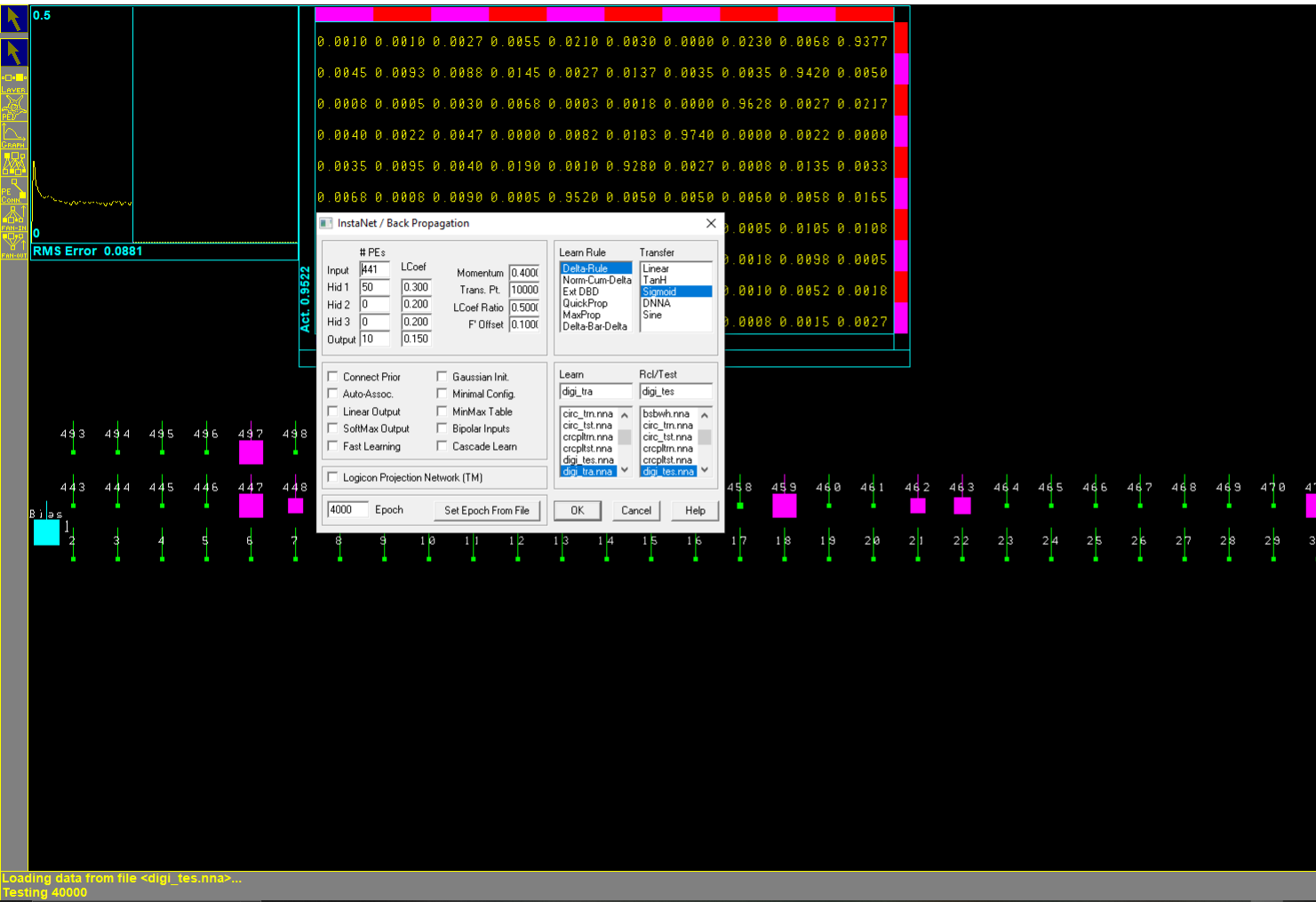Loading data from file <digi_tes.nna>...
Testing 40000

Figure 2: Configuration 3 Testing

1.3   Network Configuration

Figure 3: Configuration 3