**Marshall Lindsay**

**ECE4870/7870 CS 4770/7770 F’18 Computer Assignment 1 Part A Due 9/27/2018**

**Backpropagation Training of a MLP**

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| |  |  |  |  |  | | --- | --- | --- | --- | --- | | Hidden layer  weights | | **From Input Node** | |  | | *x1* | *x2* | *x3* | | **To Hidden Node** | *w1(1)* | 0.3962 | -1.0468 | 0.2308 | | *w2(1)* | 0.3798 | 0.6415 | -0.908 | | *w3(1)* | 0.6381 | -0.0597 | -0.8329 | | *w4(1)* | 0.00147 | -0.0531 | -0.6638 | | *w5(1)* | 0.074 | 0.2685 | -0.8456 | | *w6(1)* | -0.2159 | 1.0212 | 0.4154 | | *w7(1)* | 0.7369 | -0.4986 | -0.0304 | | *w8(1)* | -0.6918 | 0.3659 | -0.5404 | | *w9(1)* | -0.9551 | 0.9554 | -0.3903 | | *w10(1)* | 0.8490 | 0.4333 | -0.4921 | |  | *w11(1)* | 0.6377 | -0.3297 | 0.6848 | | |  |  | | --- | --- | | Hidden layer biases | | | **Node** | **Bias** | | *b1(1)* | -0.1145 | | *b2(1)* | 0.9369 | | *b3(1)* | 0.4254 | | *b4(1)* | -0.1768 | | *b5(1)* | -0.6997 | | *b6(1)* | -0.3306 | | *b7(1)* | -0.6997 | | *b8(1)* | -0.9410 | | *b9(1)* | -0.3662 | | *b10(1)* | 1.0718 | | *b11(1)* | -0.2117 | | |  |  | | --- | --- | | Output biases | | | **Node** | **Bias** | | *b1(2)* | -0.2836 | | *b2(2)* | -0.4615 | |

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| Output layer  weights | | | **From Hidden Node** | | | | | | | | | | |  | |
| *y1(1)* | *y2(1)* | | *y3(1)* | *y4(1)* | *y5(1)* | *y6(1)* | *y7(1)* | *y8(1)* | *y9(1)* | *y10(1)* | *y11(1)* |  |
| **To Output Node** | *w1(2)* | -0.3254 | | -0.2438 | -0.3306 | -0.0691 | 0.1356 | 0.2556 | 0.1052 | 0.0615 | 0.1829 | -0.5625 | 0.0728 | |  |
|  | *w2(2)* | -0.3593 | | -0.0783 | -0.0142 | -0.144 | -0.0105 | 0.0998 | 0.2760 | 0.2695 | -0.1980 | -0.0223 | 0.0665 | |  |