**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)* | 0.3793 | | -1.0764 | | 0.2306 | | | *w2(1)* | 0.3734 | | 0.6401 | | -0.9077 | | | *w3(1)* | 0.6341 | | -0.0635 | | -0.833 | | | *w4(1)* | 0.0064 | | -0.0581 | | -0.6638 | | | *w5(1)* | 0.073 | | 0.2681 | | -0.8454 | | | *w6(1)* | -0.2611 | | 1.0213 | | 0.4156 | | | *w7(1)* | 0.7381 | | -0.4974 | | -0.0307 | | | *w8(1)* | -0.6852 | | 0.3721 | | -0.5411 | | | *w9(1)* | -0.9699 | | 0.9534 | | -0.3898 | | | *w10(1)* | 0.8517 | | 0.4342 | | -0.4924 | | |  | *w11(1)* | 0.6391 | | -0.3282 | | 0.6848 | | | |  |  | | --- | --- | | Hidden layer biases | | | **Node** | **Bias** | | *b1(1)* | -0.1083 | | *b2(1)* | 0.9511 | | *b3(1)* | 0.4301 | | *b4(1)* | -0.1681 | | *b5(1)* | -0.6991 | | *b6(1)* | -0.3302 | | *b7(1)* | -0.7003 | | *b8(1)* | -0.9449 | | *b9(1)* | -0.3442 | | *b10(1)* | 1.0652 | | *b11(1)* | -0.2109 | | |  |  | | --- | --- | | Output biases | | | **Node** | **Bias** | | *b1(2)* | 0.4165 | | *b2(2)* | -0.6223 | |

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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)* | 0.2625 | 0.2504 | 0.1255 | 0.1199 | 0.1760 | 0.2865 | 0.1434 | 0.1499 | 0.3055 | -0.1127 | 0.0532 | |  |
|  | *w2(2)* | -0.4754 | -0.1332 | -0.0675 | -0.2171 | -0.0408 | 0.077 | 0.2470 | 0.2071 | -0.2694 | -0.05923 | 0.0954 | |  |