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|---|---|---|---|---|---|---|
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| | **OR gate inputs** | | | | | |
| | **A** | **B** | **Output** | | | |
| | 0 | 0 | 0 | | | |
| | 0 | 1 | 1 | | | |
| | 1 | 0 | 1 | | | |
| | 1 | 1 | 1 | | | |
| | | | | | | |
| Iteration 1 | w1 | w2 | w3 | bias | Learning rate | |
| | 0.2 | 0.3 | 0.5 | 1 | 0.5 | |
| | | | | | | |
| | A | B | Target O | w1 | w2 | w3 |
| | 0 | 0 | 0 | 0.2 | 0.3 | 0.5 |
| | 0 | 1 | 1 | 0.2 | 0.3 | 0.5 |
| | 1 | 0 | 1 | 0.2 | 0.3 | 0.5 |
| | 1 | 1 | 1 | 0.2 | 0.3 | 0.5 |
| | | | | | | |
| Iteration 2 | w1 | w2 | w3 | bias | Learning rate | |
| | 0.236783521 | 0.333158732 | 0.426859873 | 1 | 0.5 | |
| | | | | | | |
| | A | B | Target O | w1 | w2 | w3 |
| | 0 | 0 | 0 | 0.236783521 | 0.333158732 | 0.426859873 |
| | 0 | 1 | 1 | 0.236783521 | 0.333158732 | 0.426859873 |
| | 1 | 0 | 1 | 0.236783521 | 0.333158732 | 0.426859873 |
| | 1 | 1 | 1 | 0.236783521 | 0.333158732 | 0.426859873 |
| | | | | | | |
| Iteration 3 | w1 | w2 | w3 | bias | Learning rate | |
| | 0.274918468 | 0.367748837 | 0.354563026 | 1 | 0.5 | |
| | | | | | | |
| | A | B | Target O | w1 | w2 | w3 |
| | 0 | 0 | 0 | 0.274918468 | 0.367748837 | 0.354563026 |
| | 0 | 1 | 1 | 0.274918468 | 0.367748837 | 0.354563026 |
| | 1 | 0 | 1 | 0.274918468 | 0.367748837 | 0.354563026 |
| | 1 | 1 | 1 | 0.274918468 | 0.367748837 | 0.354563026 |
| | | | | | | |
| Iteration 4 | w1 | w2 | w3 | bias | Learning rate | |
| | 0.314336508 | 0.403711136 | 0.283358964 | 1 | 0.5 | |
| | | | | | | |
| | A | B | Target O | w1 | w2 | w3 |
| | 0 | 0 | 0 | 0.314336508 | 0.403711136 | 0.283358964 |
| | 0 | 1 | 1 | 0.314336508 | 0.403711136 | 0.283358964 |
| | 1 | 0 | 1 | 0.314336508 | 0.403711136 | 0.283358964 |
| | 1 | 1 | 1 | 0.314336508 | 0.403711136 | 0.283358964 |
| | | | | | | |
| Iteration 5 | w1 | w2 | w3 | bias | Learning rate | |
| | 0.354958179 | 0.440973476 | 0.213474972 | 1 | 0.5 | |
| | | | | | | |
| | A | B | Target O | w1 | w2 | w3 |
| | 0 | 0 | 0 | 0.354958179 | 0.440973476 | 0.213474972 |
| | 0 | 1 | 1 | 0.354958179 | 0.440973476 | 0.213474972 |
| | 1 | 0 | 1 | 0.354958179 | 0.440973476 | 0.213474972 |
| | 1 | 1 | 1 | 0.354958179 | 0.440973476 | 0.213474972 |

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| Iteration 6 | w1 | w2 | w3 | bias | Learning rate | |
| | 0.396694778 | 0.479452599 | 0.145110925 | 1 | 0.5 | |
| | | | | | | |
| | A | B | Target O | w1 | w2 | w3 |
| | 0 | 0 | 0 | 0.396694778 | 0.479452599 | 0.145110925 |
| | 0 | 1 | 1 | 0.396694778 | 0.479452599 | 0.145110925 |
| | 1 | 0 | 1 | 0.396694778 | 0.479452599 | 0.145110925 |
| | 1 | 1 | 1 | 0.396694778 | 0.479452599 | 0.145110925 |
| | | | | | | |
| Iteration 7 | w1 | w2 | w3 | bias | Learning rate | |
| | 0.43945045 | 0.519056294 | 0.078435763 | 1 | 0.5 | |
| | | | | | | |
| | A | B | Target O | w1 | w2 | w3 |
| | 0 | 0 | 0 | 0.43945045 | 0.519056294 | 0.078435763 |
| | 0 | 1 | 1 | 0.43945045 | 0.519056294 | 0.078435763 |
| | 1 | 0 | 1 | 0.43945045 | 0.519056294 | 0.078435763 |
| | 1 | 1 | 1 | 0.43945045 | 0.519056294 | 0.078435763 |
| | | | | | | |
| Iteration 8 | w1 | w2 | w3 | bias | Learning rate | |
| | 0.483124339 | 0.559685694 | 0.013585694 | 1 | 0.5 | |
| | | | | | | |
| | A | B | Target O | w1 | w2 | w3 |
| | 0 | 0 | 0 | 0.483124339 | 0.559685694 | 0.013585694 |
| | 0 | 1 | 1 | 0.483124339 | 0.559685694 | 0.013585694 |
| | 1 | 0 | 1 | 0.483124339 | 0.559685694 | 0.013585694 |
| | 1 | 1 | 1 | 0.483124339 | 0.559685694 | 0.013585694 |
| | | | | | | |
| Iteration 9 | w1 | w2 | w3 | bias | Learning rate | |
| | 0.527612672 | 0.601237556 | -0.04933595 | 1 | 0.5 | |
| | | | | | | |
| | A | B | Target O | w1 | w2 | w3 |
| | 0 | 0 | 0 | 0.527612672 | 0.601237556 | -0.04933595 |
| | 0 | 1 | 1 | 0.527612672 | 0.601237556 | -0.04933595 |
| | 1 | 0 | 1 | 0.527612672 | 0.601237556 | -0.04933595 |
| | 1 | 1 | 1 | 0.527612672 | 0.601237556 | -0.04933595 |
| | | | | | | |
| Iteration 10 | w1 | w2 | w3 | bias | Learning rate | |
| | 0.57281067 | 0.643606404 | -0.11025743 | 1 | 0.5 | |
| | | | | | | |
| | A | B | Target O | w1 | w2 | w3 |
| | 0 | 0 | 0 | 0.57281067 | 0.643606404 | -0.11025743 |
| | 0 | 1 | 1 | 0.57281067 | 0.643606404 | -0.11025743 |
| | 1 | 0 | 1 | 0.57281067 | 0.643606404 | -0.11025743 |
| | 1 | 1 | 1 | 0.57281067 | 0.643606404 | -0.11025743 |
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| | | | MSE calculated | | | |
| | | | 0.333000142 | | | |
| | | | | | | |
| bias | Input Agg | Predicted O | MSE term | ∂(error)/∂(O) | ∂(O)/∂(in) | ∂(in)/∂(w1) |
| 1 | 0.5 | 0.622459331 | 0.19372781 | 0.622459331 | 0.235003712 | 0 |
| 1 | 0.8 | 0.689974481 | 0.048057911 | -0.31002552 | 0.213909697 | 0 |
| 1 | 0.7 | 0.668187772 | 0.055049677 | -0.33181223 | 0.221712873 | 1 |
| 1 | 1 | 0.731058579 | 0.036164744 | -0.26894142 | 0.196611933 | 1 |
| | | | | | | |
| | | | MSE calculated | | | |
| | | | 0.327961237 | | | |
| | | | | | | |
| bias | Input Agg | Predicted O | MSE term | ∂(error)/∂(O) | ∂(O)/∂(in) | ∂(in)/∂(w1) |
| 1 | 0.426859873 | 0.605123586 | 0.183087277 | 0.605123586 | 0.238949032 | 0 |
| 1 | 0.760018606 | 0.681357773 | 0.050766434 | -0.31864223 | 0.217109358 | 0 |
| 1 | 0.663643394 | 0.660078351 | 0.057773364 | -0.33992165 | 0.224374922 | 1 |
| 1 | 0.996802127 | 0.730429374 | 0.036334161 | -0.26957063 | 0.196902303 | 1 |
| | | | | | | |
| | | | MSE calculated | | | |
| | | | 0.32287025 | | | |
| | | | | | | |
| bias | Input Agg | Predicted O | MSE term | ∂(error)/∂(O) | ∂(O)/∂(in) | ∂(in)/∂(w1) |
| 1 | 0.354563026 | 0.587723662 | 0.172709551 | 0.587723662 | 0.242304559 | 0 |
| 1 | 0.722311863 | 0.673115902 | 0.053426607 | -0.3268841 | 0.220030885 | 0 |
| 1 | 0.629481494 | 0.652371883 | 0.060422654 | -0.34762812 | 0.226782809 | 1 |
| 1 | 0.997230331 | 0.73051368 | 0.036311438 | -0.26948632 | 0.196863443 | 1 |
| | | | | | | |
| | | | MSE calculated | | | |
| | | | 0.317724958 | | | |
| | | | | | | |
| bias | Input Agg | Predicted O | MSE term | ∂(error)/∂(O) | ∂(O)/∂(in) | ∂(in)/∂(w1) |
| 1 | 0.283358964 | 0.570369526 | 0.162660698 | 0.570369526 | 0.24504813 | 0 |
| 1 | 0.6870701 | 0.665314839 | 0.056007078 | -0.33468516 | 0.222671004 | 0 |
| 1 | 0.597695473 | 0.64512889 | 0.062966752 | -0.35487111 | 0.228937605 | 1 |
| 1 | 1.001406608 | 0.731335045 | 0.036090429 | -0.26866496 | 0.196484097 | 1 |
| | | | | | | |
| | | | MSE calculated | | | |
| | | | 0.312521535 | | | |
| | | | | | | |
| bias | Input Agg | Predicted O | MSE term | ∂(error)/∂(O) | ∂(O)/∂(in) | ∂(in)/∂(w1) |
| 1 | 0.213474972 | 0.553166988 | 0.152996858 | 0.553166988 | 0.247173271 | 0 |
| 1 | 0.654448448 | 0.658012209 | 0.058477825 | -0.34198779 | 0.225032142 | 0 |
| 1 | 0.568433151 | 0.638401554 | 0.065376718 | -0.36159845 | 0.23084501 | 1 |
| 1 | 1.009406627 | 0.732904009 | 0.035670134 | -0.26709599 | 0.195755723 | 1 |

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| | | | | | | |
| | | | MSE calculated | | | |
| | | | 0.307255484 | | | |
| | | | | | | |
| bias | Input Agg | Predicted O | MSE term | ∂(error)/∂(O) | ∂(O)/∂(in) | ∂(in)/∂(w1) |
| 1 | 0.145110925 | 0.536214206 | 0.143762837 | 0.536214206 | 0.248688531 | 0 |
| 1 | 0.624563523 | 0.651255738 | 0.06081128 | -0.34874426 | 0.227121702 | 0 |
| 1 | 0.541805702 | 0.63223237 | 0.067626515 | -0.36776763 | 0.2325146 | 1 |
| 1 | 1.021258301 | 0.735217629 | 0.035054852 | -0.26478237 | 0.194672667 | 1 |
| | | | | | | |
| | | | MSE calculated | | | |
| | | | 0.301922653 | | | |
| | | | | | | |
| bias | Input Agg | Predicted O | MSE term | ∂(error)/∂(O) | ∂(O)/∂(in) | ∂(in)/∂(w1) |
| 1 | 0.078435763 | 0.519598894 | 0.134991505 | 0.519598894 | 0.249615883 | 0 |
| 1 | 0.597492057 | 0.645082319 | 0.06298328 | -0.35491768 | 0.228951121 | 0 |
| 1 | 0.517886212 | 0.626653359 | 0.069693857 | -0.37334664 | 0.233958927 | 1 |
| 1 | 1.036942506 | 0.73825963 | 0.034254011 | -0.26174037 | 0.193232349 | 1 |
| | | | | | | |
| | | | MSE calculated | | | |
| | | | 0.296520194 | | | |
| | | | | | | |
| bias | Input Agg | Predicted O | MSE term | ∂(error)/∂(O) | ∂(O)/∂(in) | ∂(in)/∂(w1) |
| 1 | 0.013585694 | 0.503396371 | 0.126703953 | 0.503396371 | 0.249988465 | 0 |
| 1 | 0.573271389 | 0.639517688 | 0.064973749 | -0.36048231 | 0.230534815 | 0 |
| 1 | 0.496710034 | 0.621685866 | 0.071560792 | -0.37831413 | 0.23519255 | 1 |
| 1 | 1.056395728 | 0.742001162 | 0.0332817 | -0.25799884 | 0.191435438 | 1 |
| | | | | | | |
| | | | MSE calculated | | | |
| | | | 0.291047362 | | | |
| | | | | | | |
| bias | Input Agg | Predicted O | MSE term | ∂(error)/∂(O) | ∂(O)/∂(in) | ∂(in)/∂(w1) |
| 1 | -0.04933595 | 0.487668514 | 0.11891029 | 0.487668514 | 0.249847934 | 0 |
| 1 | 0.551901607 | 0.634576666 | 0.066767107 | -0.36542333 | 0.231889121 | 0 |
| 1 | 0.478276724 | 0.617340866 | 0.073214007 | -0.38265913 | 0.236231121 | 1 |
| 1 | 1.079514279 | 0.746402054 | 0.032155959 | -0.25359795 | 0.189286028 | 1 |
| | | | | | | |
| | | | MSE calculated | | | |
| | | | 0.28550605 | | | |
| | | | | | | |
| bias | Input Agg | Predicted O | MSE term | ∂(error)/∂(O) | ∂(O)/∂(in) | ∂(in)/∂(w1) |
| 1 | -0.11025743 | 0.472463532 | 0.111610894 | 0.472463532 | 0.249241743 | 0 |
| 1 | 0.53334897 | 0.630263867 | 0.068352404 | -0.36973613 | 0.233031325 | 0 |
| 1 | 0.462553236 | 0.6136197 | 0.074644868 | -0.3863803 | 0.237090564 | 1 |
| 1 | 1.10615964 | 0.751412457 | 0.030897883 | -0.24858754 | 0.186791777 | 1 |
| | | | | | | |

| ∂(in)/∂(w2) | ∂(in)/∂(w2) | ∂(error)/∂(w1) | ∂(error)/∂(w2) | ∂(error)/∂(w3) | Learning rate | New w1 |
|---|---|---|---|---|---|---|
| 0 | 1 | 0 | 0 | 0.146280254 | 0.5 | |
| 1 | 1 | 0 | -0.06631746 | 0.146280254 | 0.5 | |
| 0 | 1 | -0.07356704 | 0 | 0.146280254 | 0.5 | 0.236783521 |
| 1 | 1 | -0.05287709 | -0.05287709 | 0.146280254 | 0.5 | |

| ∂(in)/∂(w2) | ∂(in)/∂(w2) | ∂(error)/∂(w1) | ∂(error)/∂(w2) | ∂(error)/∂(w3) | Learning rate | New w1 |
|---|---|---|---|---|---|---|
| 0 | 1 | 0 | 0 | 0.144593695 | 0.5 | |
| 1 | 1 | 0 | -0.06918021 | 0.144593695 | 0.5 | |
| 0 | 1 | -0.07626989 | 0 | 0.144593695 | 0.5 | 0.274918468 |
| 1 | 1 | -0.05307908 | -0.05307908 | 0.144593695 | 0.5 | |

| ∂(in)/∂(w2) | ∂(in)/∂(w2) | ∂(error)/∂(w1) | ∂(error)/∂(w2) | ∂(error)/∂(w3) | Learning rate | New w1 |
|---|---|---|---|---|---|---|
| 0 | 1 | 0 | 0 | 0.142408123 | 0.5 | |
| 1 | 1 | 0 | -0.0719246 | 0.142408123 | 0.5 | |
| 0 | 1 | -0.07883608 | 0 | 0.142408123 | 0.5 | 0.314336508 |
| 1 | 1 | -0.053052 | -0.053052 | 0.142408123 | 0.5 | |

| ∂(in)/∂(w2) | ∂(in)/∂(w2) | ∂(error)/∂(w1) | ∂(error)/∂(w2) | ∂(error)/∂(w3) | Learning rate | New w1 |
|---|---|---|---|---|---|---|
| 0 | 1 | 0 | 0 | 0.139767986 | 0.5 | |
| 1 | 1 | 0 | -0.07452468 | 0.139767986 | 0.5 | |
| 0 | 1 | -0.08124334 | 0 | 0.139767986 | 0.5 | 0.354958179 |
| 1 | 1 | -0.05278839 | -0.05278839 | 0.139767986 | 0.5 | |

| ∂(in)/∂(w2) | ∂(in)/∂(w2) | ∂(error)/∂(w1) | ∂(error)/∂(w2) | ∂(error)/∂(w3) | Learning rate | New w1 |
|---|---|---|---|---|---|---|
| 0 | 1 | 0 | 0 | 0.136728094 | 0.5 | |
| 1 | 1 | 0 | -0.07695825 | 0.136728094 | 0.5 | |
| 0 | 1 | -0.0834732 | 0 | 0.136728094 | 0.5 | 0.396694778 |
| 1 | 1 | -0.05228557 | -0.05228557 | 0.136728094 | 0.5 | |

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| ∂(in)/∂(w2) | ∂(in)/∂(w2) | ∂(error)/∂(w1) | ∂(error)/∂(w2) | ∂(error)/∂(w3) | Learning rate | New w1 |
| 0 | 1 | 0 | 0 | 0.133350323 | 0.5 | |
| 1 | 1 | 0 | -0.07920739 | 0.133350323 | 0.5 | |
| 0 | 1 | -0.08551134 | 0 | 0.133350323 | 0.5 | 0.43945045 |
| 1 | 1 | -0.05154589 | -0.05154589 | 0.133350323 | 0.5 | |
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| ∂(in)/∂(w2) | ∂(in)/∂(w2) | ∂(error)/∂(w1) | ∂(error)/∂(w2) | ∂(error)/∂(w3) | Learning rate | New w1 |
| 0 | 1 | 0 | 0 | 0.129700137 | 0.5 | |
| 1 | 1 | 0 | -0.0812588 | 0.129700137 | 0.5 | |
| 0 | 1 | -0.08734778 | 0 | 0.129700137 | 0.5 | 0.483124339 |
| 1 | 1 | -0.05057671 | -0.05057671 | 0.129700137 | 0.5 | |
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| ∂(in)/∂(w2) | ∂(in)/∂(w2) | ∂(error)/∂(w1) | ∂(error)/∂(w2) | ∂(error)/∂(w3) | Learning rate | New w1 |
| 0 | 1 | 0 | 0 | 0.125843286 | 0.5 | |
| 1 | 1 | 0 | -0.08310372 | 0.125843286 | 0.5 | |
| 0 | 1 | -0.08897667 | 0 | 0.125843286 | 0.5 | 0.527612672 |
| 1 | 1 | -0.04939012 | -0.04939012 | 0.125843286 | 0.5 | |
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| ∂(in)/∂(w2) | ∂(in)/∂(w2) | ∂(error)/∂(w1) | ∂(error)/∂(w2) | ∂(error)/∂(w3) | Learning rate | New w1 |
| 0 | 1 | 0 | 0 | 0.121842971 | 0.5 | |
| 1 | 1 | 0 | -0.0847377 | 0.121842971 | 0.5 | |
| 0 | 1 | -0.090396 | 0 | 0.121842971 | 0.5 | 0.57281067 |
| 1 | 1 | -0.04800255 | -0.04800255 | 0.121842971 | 0.5 | |
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| ∂(in)/∂(w2) | ∂(in)/∂(w2) | ∂(error)/∂(w1) | ∂(error)/∂(w2) | ∂(error)/∂(w3) | Learning rate | New w1 |
| 0 | 1 | 0 | 0 | 0.117757634 | 0.5 | |
| 1 | 1 | 0 | -0.0861601 | 0.117757634 | 0.5 | |
| 0 | 1 | -0.09160712 | 0 | 0.117757634 | 0.5 | 0.618614232 |
| 1 | 1 | -0.04643411 | -0.04643411 | 0.117757634 | 0.5 | |
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| New w2 | New w3 |
| | 0.426859873 |
| 0.333158732 | |
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| New w2 | New w3 |
| | 0.354563026 |
| 0.367748837 | |
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| New w2 | New w3 |
| | 0.283358964 |
| 0.403711136 | |
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| New w2 | New w3 |
| | 0.213474972 |
| 0.440973476 | |
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| New w2 | New w3 |
| | 0.145110925 |
| 0.479452599 | |
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| New w2 | New w3 |
| | 0.078435763 |
| 0.519056294 | |
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| New w2 | New w3 |
| | 0.013585694 |
| 0.559685694 | |
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| New w2 | New w3 |
| | -0.04933595 |
| 0.601237556 | |
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| New w2 | New w3 |
| | -0.11025743 |
| 0.643606404 | |
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| New w2 | New w3 |
| | -0.16913625 |
| 0.686686454 | |
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