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| --- | --- | --- |
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Experiments trials

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Hidden nodes | Eta | Gamma | Train error | Val error |
| 1 | 4 | 0.5 | 1 | 0.47054815 | 0.48897305 |
| 2 | 6 | 0.5 | 1 | 0.40480858 | 0.4411076 |
| 3 | 8 | 0.5 | 1 | 0.3071131 | 0.37102997 |
| 4 | 10 | 0.5 | 1 | 0.29408213 | 0.3608443 |
| 5 | 14 | 0.5 | 1 | 0.29582825 | 0.35030898 |
| 6 | 16 | 0.5 | 1 | 0.3648552 | 0.4263584 |

## The best model

My best mode is number **5**

**Hidden = 14, Eta = 0.5, Gamma = 1**

## How Experiments parameters are used

# We used incrementally heuristic

# Try learning rates in best model

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Hidden nodes | Eta | Gamma | Train error | Val error | Conclusion |
| 1 | 14 | -0.5 | 1 | 0.9777768 | 0.9777764 | Values between 0 and 1 gives |
| 2 | 14 | 0 | 1 | 0.897653 | 0.897653 | Minimum error and speed up learning rate |
| 3 | 14 | 0.1 | 1 | 0.15295693 | 0.26477912 | If it is to minimum slow if it is to large it go |
| 4 | 14 | 0.8 | 1 | 0.5481696 | 0.53764117 | far from trsult |
| 5 | 14 | 10 | 1 | 0.9180147 | 0.9247877 |  |

My best mode is number **3**

**Hidden = 14, Eta = 0.1, Gamma = 1**

# Try gamma values in best model

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Hidden nodes | Eta | Gamma | Train error | Val error | Conclusion |
| 1 | 14 | 0.1 | 0 | 0.5 | 0.5 | Gamma between 0 and 1 minimize error |
| 2 | 14 | 0.1 | 0.5 | 0.037373167 | 0.17589328 | And speeds up learning rate |
| 3 | 14 | 0.1 | 1 | 0.17971641 | 0.3003685 | When increasing to much it maximize |
| 4 | 14 | 0.1 | 3 | 0.31589645 | 0.4157502 | error |
| 5 | 14 | 0.1 | 6 | 0.51822054 | 0.57777864 |  |
| 6 | 14 | 0.1 | 20 | 0.8031209 | 0.77684677 |  |

My best mode is number **2**

**Hidden = 14, Eta = 0.1, Gamma = 0.5**