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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Hidden nodes | Eta | Gamma | Train error | Val error |
| 1 | 4 | 0.5 | 1 | 0.50847805 | 0.49993291 |
| 2 | 6 | 0.5 | 1 | 0.5464349 | 0.5396924 |
| 3 | 8 | 0.5 | 1 | 0.59618723 | 0.5996601 |
| 4 | 10 | 0.5 | 1 | 0.81499326 | 0.78160155 |
| 5 | 12 | 0.5 | 1 | 0.53258836 | 0.532159 |

## The best model

My best mode is number **1**

**Hidden = 4, 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 | 4 | -0.5 | 1 | 1.0014553 | 0.99743384 | Values between 0 and 1 gives |
| 2 | 4 | 0 | 1 | 0.7116395 | 0.7046951 | Minimum error and speed up learning rate |
| 3 | 4 | 0.1 | 1 | 0.52400076 | 0.4970569 |  |
| 4 | 4 | 0.8 | 1 | 0.5629905 | 0.58535665 |  |
| 5 | 4 | 10 | 1 | 0.6507657 | 0.6999446 |  |

My best mode is number **3**

**Hidden = 4, Eta = 0.1, Gamma = 1**

# Try gamma values in best model

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Hidden nodes | Eta | Gamma | Train error | Val error | Conclusion |
| 1 | 4 | 0.1 | 0 | 0.5069444 | 0.5 | Gamma between 0 and 1 gives min error |
| 2 | 4 | 0.1 | 1 | 0.610536 | 0.57215387 |  |
| 3 | 4 | 0.1 | 3 | 0.94848174 | 0.93708384 |  |
| 4 | 4 | 0.1 | 6 | 0.880857 | 0.89357126 |  |
| 5 | 4 | 0.1 | 20 | 0.66447365 | 0.5999578 |  |

My best mode is number **1**

**Hidden = 4, Eta = 0.1, Gamma = 0**