Deep Learning – CS5173

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Homework 1

**Step 1: Data**

Answer written **answer.md** file

**Step 2: Model**

|  |  |
| --- | --- |
| **Model** | **Test R2** |
| Linear Regression | 0.782 |
| DNN 16 | 0.788 |
| DNN 30 8 | 0.827 |
| DNN 30 16 8 | 0.672 |
| DNN 30 16 8 4 | 0.843 |

**Step 3: Objective [See in notebook]**

**Step 4: Optimization [See in notebook]**

**Step 5: Model selection**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Model** | **LR: 0.1 (R2)** | **LR: 0.01 (R2)** | **LR: 0.001 (R2)** | **LR: 0.0001 (R2)** |
| Linear Regression | 0.7777 | 0.7063 | 0.5742 | 0.5568 |
| DNN 16 | 0.7230 | 0.7942 | 0.3322 | 0.8190 |
| DNN 30 8 | -2.0811 | 0.7692 | 0.8604 (best) | 0.5216 |
| DNN 30 16 8 | -2.4990 | 0.7536 | 0.8507 | 0.6057 |
| DNN 30 16 8 4 | -4.5854 | 0.5791 | 0.8415 | 0.6317 |

**Step 6: Model Performance**

Plot of best performance per model with the Learning Rate, MSE





