Lstm1

64 min batch

50 epochs

10 trials

24 hrs

|  | **neurons** | **activation** | **learning\_rate** | **loss** | **val\_loss** |
| --- | --- | --- | --- | --- | --- |
| **08** | 32 | tanh | 0.001 | mse | 0.196736 |
| **06** | 32 | tanh | 0.0001 | mse | 0.200611 |
| **03** | 64 | tanh | 0.01 | mse | 0.201942 |
| **01** | 32 | tanh | 0.01 | mse | 0.20401 |
| **02** | 32 | relu | 0.0001 | mae | 0.206297 |
| **04** | 32 | sigmoid | 0.001 | mse | 0.221673 |
| **07** | 16 | sigmoid | 0.001 | mae | 0.241202 |
| **09** | 32 | sigmoid | 0.0001 | mse | 0.258821 |
| **05** | 16 | relu | 0.00001 | mse | 0.482891 |
| **00** | 16 | sigmoid | 0.00001 | mae | 0.539199 |

Lstm2

64 min batch

100 epochs

10 trials

24 hours

|  | **neurons** | **activation** | **learning\_rate** | **loss** | **val\_loss** |
| --- | --- | --- | --- | --- | --- |
| **00** | 32 | tanh | 0.0001 | mse | 0.194903 |
| **01** | 32 | tanh | 0.001 | mse | 0.197611 |
| **02** | 32 | sigmoid | 0.001 | mse | 0.200377 |
| **03** | 64 | tanh | 0.01 | mse | 0.201159 |
| **04** | 32 | tanh | 0.01 | mse | 0.206223 |
| **05** | 32 | relu | 0.0001 | mae | 0.206885 |
| **06** | 16 | sigmoid | 0.001 | mae | 0.224295 |
| **07** | 32 | sigmoid | 0.0001 | mse | 0.244804 |
| **08** | 16 | relu | 0.00001 | mse | 0.319209 |
| **09** | 16 | sigmoid | 0.00001 | mae | 0.575151 |

Lstm3

32 min batch

50 epochs

10 trials

24 hours

|  | **neurons** | **activation** | **learning\_rate** | **loss** | **val\_loss** |
| --- | --- | --- | --- | --- | --- |
| **00** | 32 | tanh | 0.001 | mse | 0.195523 |
| **01** | 32 | tanh | 0.0001 | mse | 0.197818 |
| **02** | 32 | sigmoid | 0.001 | mse | 0.200597 |
| **03** | 32 | relu | 0.0001 | mae | 0.204901 |
| **04** | 64 | tanh | 0.01 | mse | 0.20622 |
| **05** | 32 | tanh | 0.01 | mse | 0.207743 |
| **06** | 16 | sigmoid | 0.001 | mae | 0.230861 |
| **07** | 32 | sigmoid | 0.0001 | mse | 0.247098 |
| **08** | 16 | relu | 0.00001 | mse | 0.327597 |
| **09** | 16 | sigmoid | 0.00001 | mae | 0.58198 |
|  |  |  |  |  |  |

Lstm4

32 min batch

50 epochs

10 trials

48 hours

|  | **neurons** | **activation** | **learning\_rate** | **loss** | **val\_loss** |
| --- | --- | --- | --- | --- | --- |
| **00** | 32 | tanh | 0.001 | mse | 0.192951 |
| **01** | 32 | tanh | 0.0001 | mse | 0.195327 |
| **02** | 32 | sigmoid | 0.001 | mse | 0.200351 |
| **03** | 32 | relu | 0.0001 | mae | 0.200936 |
| **04** | 32 | tanh | 0.01 | mse | 0.216456 |
| **05** | 16 | sigmoid | 0.001 | mae | 0.22348 |
| **06** | 32 | sigmoid | 0.0001 | mse | 0.249827 |
| **07** | 16 | relu | 0.00001 | mse | 0.296305 |
| **08** | 64 | tanh | 0.01 | mse | 0.354547 |
| **09** | 16 | sigmoid | 0.00001 | mae | 0.567817 |

Lstm5

64 min batch

50 epochs

10 trials

48 hours

|  | **neurons** | **activation** | **learning\_rate** | **loss** | **val\_loss** |
| --- | --- | --- | --- | --- | --- |
| **00** | 32 | tanh | 0.001 | mse | 0.193627 |
| **01** | 32 | sigmoid | 0.001 | mse | 0.201173 |
| **02** | 32 | tanh | 0.0001 | mse | 0.202188 |
| **03** | 64 | tanh | 0.01 | mse | 0.207205 |
| **04** | 32 | relu | 0.0001 | mae | 0.224861 |
| **05** | 32 | tanh | 0.01 | mse | 0.229084 |
| **06** | 16 | sigmoid | 0.001 | mae | 0.238259 |
| **07** | 32 | sigmoid | 0.0001 | mse | 0.260408 |
| **08** | 16 | relu | 0.00001 | mse | 0.514425 |
| **09** | 16 | sigmoid | 0.00001 | mae | 0.548747 |

Lstm6

32 min batch

50 epochs

10 trials

72 hours

|  | **neurons** | **activation** | **learning\_rate** | **loss** | **val\_loss** |
| --- | --- | --- | --- | --- | --- |
| **00** | 32 | tanh | 0.001 | mse | 0.194875 |
| **01** | 32 | sigmoid | 0.001 | mse | 0.201644 |
| **02** | 32 | tanh | 0.0001 | mse | 0.202104 |
| **03** | 32 | relu | 0.0001 | mae | 0.203716 |
| **04** | 32 | tanh | 0.01 | mse | 0.208337 |
| **05** | 16 | sigmoid | 0.001 | mae | 0.232278 |
| **06** | 32 | sigmoid | 0.0001 | mse | 0.251231 |
| **07** | 16 | relu | 0.00001 | mse | 0.289071 |
| **08** | 64 | tanh | 0.01 | mse | 0.326738 |
| **09** | 16 | sigmoid | 0.00001 | mae | 0.551844 |

Lstm7

64 min batch

50 epochs

10 trials

72 hours

|  | **neurons** | **activation** | **learning\_rate** | **loss** | **val\_loss** |
| --- | --- | --- | --- | --- | --- |
| **00** | 32 | tanh | 0.001 | mse | 0.191766 |
| **01** | 32 | tanh | 0.0001 | mse | 0.193819 |
| **02** | 32 | sigmoid | 0.001 | mse | 0.19983 |
| **03** | 32 | tanh | 0.01 | mse | 0.200516 |
| **04** | 16 | sigmoid | 0.001 | mae | 0.237086 |
| **05** | 32 | sigmoid | 0.0001 | mse | 0.256971 |
| **06** | 64 | tanh | 0.01 | mse | 0.328912 |
| **07** | 32 | relu | 0.0001 | mae | 0.485965 |
| **08** | 16 | relu | 0.00001 | mse | 0.505513 |
| **09** | 16 | sigmoid | 0.00001 | mae | 0.570843 |

CNN-LSTM1

64 min batch

50 epochs

10 trials

24 hours

|  | **filters** | **kernel** | **activation** | **nuerons** | **pool\_size** | **learning\_rate** | **loss** | **val\_loss** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **00** | 40 | 4 | relu | 64 | 2 | 0.0001 | mse | 0.19158 |
| **01** | 40 | 3 | tanh | 16 | 2 | 0.0001 | mse | 0.193173 |
| **02** | 40 | 4 | relu | 16 | 1 | 0.0001 | mse | 0.194945 |
| **03** | 20 | 3 | tanh | 16 | 1 | 0.001 | mae | 0.196382 |
| **04** | 20 | 2 | relu | 64 | 1 | 0.0001 | mse | 0.196492 |
| **05** | 40 | 4 | sigmoid | 16 | 1 | 0.001 | mae | 0.196807 |
| **06** | 40 | 2 | sigmoid | 16 | 2 | 0.01 | mse | 0.200649 |
| **07** | 40 | 3 | relu | 32 | 2 | 0.01 | mse | 0.202015 |
| **08** | 20 | 3 | relu | 32 | 1 | 0.00001 | mae | 0.209872 |
| **09** | 20 | 4 | tanh | 32 | 1 | 0.01 | mse | 0.217718 |

CNN-LSTM2

32 min batch

50 epochs

10 trials

24 hours

| **filters** | **kernel** | **activation** | **nuerons** | **pool\_size** | **learning\_rate** | **loss** | **val\_loss** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **00** | 40 | 4 | relu | 64 | 2 | 0.0001 | mse | 0.19208 |
| **01** | 40 | 4 | relu | 16 | 1 | 0.0001 | mse | 0.1921 |
| **02** | 40 | 4 | sigmoid | 16 | 1 | 0.001 | mae | 0.193819 |
| **03** | 20 | 2 | relu | 64 | 1 | 0.0001 | mse | 0.194686 |
| **04** | 20 | 3 | tanh | 16 | 1 | 0.001 | mae | 0.195577 |
| **05** | 40 | 3 | tanh | 16 | 2 | 0.0001 | mse | 0.195721 |
| **06** | 40 | 3 | relu | 32 | 2 | 0.01 | mse | 0.198715 |
| **07** | 40 | 2 | sigmoid | 16 | 2 | 0.01 | mse | 0.199231 |
| **08** | 20 | 3 | relu | 32 | 1 | 0.00001 | mae | 0.206932 |
| **09** | 20 | 4 | tanh | 32 | 1 | 0.01 | mse | 0.214004 |

CNN-LSTM3

64 min batch

50 epochs

10 trials

48 hours

| **filters** | **kernel** | **activation** | **nuerons** | **pool\_size** | **learning\_rate** | **loss** | **val\_loss** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **00** | 40 | 4 | relu | 16 | 1 | 0.0001 | mse | 0.192979 |
| **01** | 40 | 4 | sigmoid | 16 | 1 | 0.001 | mae | 0.193786 |
| **02** | 40 | 3 | relu | 32 | 2 | 0.01 | mse | 0.196134 |
| **03** | 40 | 4 | relu | 64 | 2 | 0.0001 | mse | 0.1976 |
| **04** | 40 | 3 | tanh | 16 | 2 | 0.0001 | mse | 0.199193 |
| **05** | 20 | 3 | tanh | 16 | 1 | 0.001 | mae | 0.200138 |
| **06** | 40 | 2 | sigmoid | 16 | 2 | 0.01 | mse | 0.200828 |
| **07** | 20 | 2 | relu | 64 | 1 | 0.0001 | mse | 0.201036 |
| **08** | 20 | 4 | tanh | 32 | 1 | 0.01 | mse | 0.212215 |
| **09** | 20 | 3 | relu | 32 | 1 | 0.00001 | mae | 0.225363 |

CNN-LSTM4

32 min batch

50 epochs

10 trials

48 hours

| **filters** | **kernel** | **activation** | **nuerons** | **pool\_size** | **learning\_rate** | **loss** | **val\_loss** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **00** | 40 | 4 | relu | 16 | 1 | 0.0001 | mse | 0.192134 |
| **01** | 20 | 2 | relu | 64 | 1 | 0.0001 | mse | 0.192189 |
| **02** | 40 | 4 | sigmoid | 16 | 1 | 0.001 | mae | 0.192245 |
| **03** | 40 | 4 | relu | 64 | 2 | 0.0001 | mse | 0.195418 |
| **04** | 40 | 3 | tanh | 16 | 2 | 0.0001 | mse | 0.195534 |
| **05** | 40 | 2 | sigmoid | 16 | 2 | 0.01 | mse | 0.198509 |
| **06** | 20 | 3 | tanh | 16 | 1 | 0.001 | mae | 0.202059 |
| **07** | 40 | 3 | relu | 32 | 2 | 0.01 | mse | 0.203042 |
| **08** | 20 | 4 | tanh | 32 | 1 | 0.01 | mse | 0.210026 |
| **09** | 20 | 3 | relu | 32 | 1 | 0.00001 | mae | 0.217386 |

CNN-LSTM5

64 min batch

50 epochs

10 trials

72 hours

| **filters** | **kernel** | **activation** | **nuerons** | **pool\_size** | **learning\_rate** | **loss** | **val\_loss** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **00** | 40 | 4 | sigmoid | 16 | 1 | 0.001 | mae | 0.194316 |
| **01** | 40 | 4 | relu | 64 | 2 | 0.0001 | mse | 0.195258 |
| **02** | 20 | 3 | tanh | 16 | 1 | 0.001 | mae | 0.195279 |
| **03** | 40 | 4 | relu | 16 | 1 | 0.0001 | mse | 0.196624 |
| **04** | 40 | 3 | relu | 32 | 2 | 0.01 | mse | 0.198052 |
| **05** | 20 | 2 | relu | 64 | 1 | 0.0001 | mse | 0.198921 |
| **06** | 40 | 3 | tanh | 16 | 2 | 0.0001 | mse | 0.199487 |
| **07** | 40 | 2 | sigmoid | 16 | 2 | 0.01 | mse | 0.202686 |
| **08** | 20 | 4 | tanh | 32 | 1 | 0.01 | mse | 0.210645 |
| **09** | 20 | 3 | relu | 32 | 1 | 0.00001 | mae | 0.227678 |

CNN-LSTM6

32 min batch

50 epochs

10 trials

72 hours

| **filters** | **kernel** | **activation** | **nuerons** | **pool\_size** | **learning\_rate** | **loss** | **val\_loss** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **00** | 40 | 4 | sigmoid | 16 | 1 | 0.001 | mae | 0.193974 |
| **01** | 40 | 4 | relu | 16 | 1 | 0.0001 | mse | 0.195738 |
| **02** | 40 | 3 | tanh | 16 | 2 | 0.0001 | mse | 0.195984 |
| **03** | 40 | 2 | sigmoid | 16 | 2 | 0.01 | mse | 0.198124 |
| **04** | 20 | 3 | tanh | 16 | 1 | 0.001 | mae | 0.199223 |
| **05** | 40 | 4 | relu | 64 | 2 | 0.0001 | mse | 0.199248 |
| **06** | 20 | 2 | relu | 64 | 1 | 0.0001 | mse | 0.199346 |
| **07** | 40 | 3 | relu | 32 | 2 | 0.01 | mse | 0.206633 |
| **08** | 20 | 4 | tanh | 32 | 1 | 0.01 | mse | 0.209561 |
| **09** | 20 | 3 | relu | 32 | 1 | 0.00001 | mae | 0.22639 |