python train.py --model\_dir=../models --save\_model\_name=flow\_prediction --data\_dir=../data --log\_dir=../logs --train\_epoch=2000 --batch\_size=144 --time\_step=12 --num\_layers=3 --hidden\_size=512 --output\_size=69 --cell=lstm --use\_residual=True --res\_weight=0.1 --learning\_rate=0.08 --use\_dropout=True --keep\_prob=0.9

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Layer | Node | Res | Drop | MAPE | MAP | RMSE | Train time |
| 1 | 512 | N | 0.9 | 0.069844 | 19.1894 | 27.6877 | 1796.88 |
| 2 | 512 | 0.1 | 0.9 | 0.070357 | 19.1573 | 27.5351 | 3250.49 |
| 3 | 512 | 0.1 | 0.9 | 0.069801 | 19.0924 | 27.6686 | 4640.29 |
| 4 | 512 | 0.1 | 0.9 | 0.070646 | 19.1606 | 27.6569 | 5843.4404 |
|  |  |  |  |  |  |  |  |

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| --- | --- | --- | --- | --- | --- | --- | --- |
| Node | Layer | Res | Drop | MAPE | MAP | RMSE | Train time |
| 128 | 3 | 0.1 | 0.9 | 0.075411 | 21.0313 | 30.3409 | 3623.9063 |
| 256 | 3 | 0.1 | 0.9 | 0.071559 | 19.4617 | 28.0158 | 4030.81 |
| 512 | 3 | 0.1 | 0.9 | 0.069801 | 19.0924 | 27.6686 | 4640.29 |
| 768 | 3 | 0.1 | 0.9 | 0.069624 | 19.4308 | 28.1000 | 6553.28 |
| 1024 | 3 | 0.1 | 0.9 | 0.069975 | 19.0047 | 27.5143 | 10196.26 |
|  |  |  |  |  |  |  |  |
| 256 | 2 | 0.1 | 0.9 | 0.071129 | 19.4436 | 27.9306 | 2864.91 |
| 512 | 2 | 0.1 | 0.9 | 0.070357 | 19.1573 | 27.5351 | 3250.49 |
| 768 | 2 | 0.1 | 0.9 | 0.069926 | 19.0008 | 27.5331 | 4340.53 |
| 1024 | 2 | 0.1 | 0.9 | 0.069548 | 19.1407 | 27.5779 | 6619.51 |
| 1280 | 2 | 0.1 | 0.9 | 0.069692 | 18.9403 | 27.4801 | 9949.82 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Drop | Layer | Node | Res | MAPE | MAP | RMSE | Train time |
| 0.5 | 3 | 512 | 0.1 | 0.072194 | 19.7071 | 28.5221 | 4571.25 |
| 0.8 | 3 | 512 | 0.1 | 0.069967 | 19.1242 | 27.7196 | 4658.73 |
| 0.9 | 3 | 512 | 0.1 | 0.069801 | 19.0924 | 27.6686 | 4640.29 |
| N | 3 | 512 | 0.1 | 0.079419 | 22.8854 | 33.1643 | 4484.1461 |
|  |  |  |  |  |  |  |  |
| 0.8 | 1 | 512 | N | 0.070018 | 19.1977 | 27.7968 | 1860.37 |
| 0.9 | 1 | 512 | N | 0.069844 | 19.1894 | 27.6877 | 1796.88 |
| N | 1 | 512 | N | 0.070971 | 19.5737 | 28.2691 | 1767.84 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Res | Layer | Node | Drop | MAPE | MAP | RMSE | Train time |
| 0.05 | 3 | 512 | 0.9 | 0.070109 | 19.1239 | 27.6917 | 4675.02 |
| 0.1 | 3 | 512 | 0.9 | 0.069801 | 19.0924 | 27.6686 | 4640.29 |
| 0.2 | 3 | 512 | 0.9 | 0.069924 | 19.097 | 27.6404 | 4710.65 |
| 0.3 | 3 | 512 | 0.9 | 0.069823 | 19.0539 | 27.5754 | 4712.62 |
| 1 | 3 | 512 | 0.9 | 0.07126 | 19.4332 | 28.1007 | 4644.46 |
| N | 3 | 512 | 0.9 | 0.08987 | 26.5771 | 39.6738 | 4712.62 |
|  |  |  |  |  |  |  |  |
| 0.1 | 2 | 512 | 0.9 | 0.070357 | 19.1573 | 27.5351 | 3250.49 |
| 0.3 | 2 | 512 | 0.9 | 0.069939 | 19.0506 | 27.5648 | 3051.29 |
|  |  |  |  |  |  |  |  |
| 0.1 | 3 | 512 | 0.8 | 0.069967 | 19.1242 | 27.7196 | 4658.73 |
| 0.3 | 3 | 512 | 0.8 | 0.070132 | 19.1107 | 27.7069 | 4584.21 |
|  |  |  |  |  |  |  |  |
| 0.1 | 3 | 512 | N | 0.079419 | 22.8854 | 33.1643 | 4484.1461 |
| 0.3 | 3 | 512 | N | 0.070998 | 19.7275 | 28.5564 | 4399.2324 |
|  |  |  |  |  |  |  |  |
| 0.1 | 3 | 256 | 0.9 | 0.071559 | 19.4617 | 28.0158 | 4030.81 |
| 0.3 | 3 | 256 | 0.9 | 0.070695 | 19.2949 | 27.7900 | 3967.62 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Peephole | Layer | Node | Res | Drop | MAPE | MAP | RMSE | Train t |
| N | 3 | 512 | 0.1 | 0.9 | 0.069801 | 19.0924 | 27.6686 | 4640.29 |
| Y | 3 | 512 | 0.1 | 0.9 | 0.069822 | 19.0929 | 27.5700 | 5953.65 |
|  |  |  |  |  |  |  |  |  |