|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Name | P 0 | R 0 | F1 0 | P 1 | R 1 | F1 1 | P 2 | R 2 | F1 2 | P 3 | R 3 | F1 3 |
| RNN ALL | 0.6957 | 0.8376 | 0.7361 | 0.5305 | 0.7527 | 0.5931 | 0.6103 | 0.9183 | 0.6937 | 0.4817 | 0.7027 | 0.5518 |
| RNN Role Based Entity | 0.7176 | 0.7796 | 0.7289 | 0.5799 | 0.7721 | 0.6302 | 0.6611 | 0.8676 | 0.6989 | 0.5527 | 0.7852 | 0.6255 |
| RNN Vanilla | 0.0360 | 0.0267 | 0.0290 | 0.0333 | 0.0197 | 0.0236 | 0.0261 | 0.0229 | 0.0240 | 0.0806 | 0.0444 | 0.0548 |
| Transformer ALL | 0.8334 | 0.8877 | 0.8469 | 0.5955 | 0.7312 | 0.6292 | 0.7061 | 0.9216 | 0.7697 | 0.4868 | 0.6368 | 0.5324 |
| Transformer Role Based Entity | 0.9014 | 0.9372 | 0.9099 | 0.8037 | 0.8960 | 0.8305 | 0.8508 | 0.9717 | 0.8863 | 0.7161 | 0.8530 | 0.7627 |
| Transformer Vanilla | 0.0487 | 0.0325 | 0.0371 | 0.0444 | 0.0404 | 0.0388 | 0.0577 | 0.0577 | 0.0545 | 0.0645 | 0.0645 | 0.0603 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| System | Entity F1 | | | | | | | | | | | | BLEU |
|  | **d=0** | | | **d=1** | | | **d=2** | | | **d >=3** | | |  |
| **P** | **R** | **F1** | **P** | **R** | **F1** | **P** | **R** | **F1** | **P** | **R** | **F1** |
| AllenNLP | 0.935 | 0.926 | 0.929 | 0.194 | 0.132 | 0.151 | 0.193 | 0.152 | 0.164 | 0.411 | 0.199 | 0.257 | 54.070 |
| Copy turn | 0.966 | 0.965 | 0.966 | 0.127 | 0.086 | 0.099 | 0.176 | 0.141 | 0.149 | 0.363 | 0.177 | 0.227 | 58.990 |
| Neuralcoref | 0.957 | 0.954 | 0.955 | 0.215 | 0.145 | 0.166 | 0.199 | 0.170 | 0.176 | 0.379 | 0.187 | 0.240 | 57.410 |
| RNN Vanilla | 0.304 | 0.234 | 0.254 | 0.148 | 0.090 | 0.106 | 0.176 | 0.155 | 0.162 | 0.199 | 0.108 | 0.130 | 18.660 |
| + Role Based Entity | 0.718 | 0.780 | 0.729 | 0.580 | 0.772 | 0.630 | 0.661 | 0.868 | 0.699 | 0.553 | 0.785 | 0.626 | 37.850 |
| + Syntax Info | 0.696 | 0.838 | 0.736 | 0.531 | 0.753 | 0.593 | 0.610 | 0.918 | 0.694 | 0.482 | 0.703 | 0.552 | 28.290 |
| Transformer Vanilla | 0.814 | 0.774 | 0.781 | 0.672 | 0.572 | 0.593 | 0.744 | 0.771 | 0.743 | 0.649 | 0.575 | 0.581 | 47.520 |
| + Role Based Entity | 0.901 | 0.937 | 0.910 | 0.804 | 0.896 | 0.830 | 0.851 | 0.972 | 0.886 | 0.716 | 0.853 | 0.763 | 60.740 |
| + Syntax Info | 0.889 | 0.912 | 0.893 | 0.743 | 0.833 | 0.765 | 0.846 | 0.939 | 0.875 | 0.557 | 0.678 | 0.594 | 63.740 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| System | ResF1 | | | | | | | | |
|  | **Navigate** | | | **Schedule** | | | **Weather** | | |
|  | **P** | **R** | **F1** | **P** | **R** | **F1** | **P** | **R** | **F1** |
| Transformer + Consistent Role Based Entity Indexing | 0.844 | 0.932 | 0.872 | 0.914 | 0.948 | 0.922 | 0.934 | 0.984 | 0.951 |
| Transformer Role Based Entity | 0.864 | 0.903 | 0.875 | 0.946 | 0.964 | 0.950 | 0.977 | 0.977 | 0.975 |

|  |  |  |  |
| --- | --- | --- | --- |
| System | ResF1 | | |
|  | P | R | F1 |
| NeuralCoref | 0.267 | 0.433 | 0.317 |
| Transformer model | 0.351 | 0.532 | 0.403 |
| + Role Based Entity Indexing | 0.429 | 0.664 | 0.496 |