# Experiments

## Performance Comparison

| Category | Method | Accuracy | AUC-ROC | Fake News | | | Real News | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Precision | Recall | $F_1$ | Precision | Recall | $F_1$ |
| Supervised | LIWC-LR | 0.528 | 0.558 | 0.604 | 0.160 | 0.253 | 0.517 | 0.896 | 0.655 |
| | LIWC-SVM | 0.568 | 0.598 | 0.574 | 0.521 | 0.546 | 0.563 | 0.614 | 0.587 |
| | LIWC-RF | 0.590 | 0.616 | 0.613 | 0.483 | 0.541 | 0.574 | 0.696 | 0.629 |
| | LSTM | 0.733 | 0.799 | 0.876 | 0.543 | 0.670 | 0.669 | **0.923** | 0.775 |
| | CNN | 0.747 | 0.834 | 0.869 | 0.580 | 0.696 | 0.685 | 0.913 | 0.783 |
| | EANN | 0.767 | 0.803 | 0.863 | 0.634 | 0.731 | 0.711 | 0.899 | 0.794 |
| Semi-supervised | $LSTM_{semi}$ | 0.753 | 0.841 | 0.854 | 0.611 | 0.713 | 0.697 | 0.895 | 0.784 |
| | $CNN_{semi}$ | 0.759 | 0.848 | 0.850 | 0.630 | 0.723 | 0.706 | 0.889 | 0.787 |
| Automatically annotated | WeFEND− | 0.807 | 0.858 | 0.846 | **0.751** | 0.795 | 0.776 | 0.863 | 0.817 |
| | WeFEND | **0.824** | **0.873** | **0.880** | **0.751** | **0.810** | **0.783** | 0.898 | **0.836** |

- To reduce the influence of noisy labels, WeFEND has the data selector component based on reinforcement learning techniques, precision values of WeFEND are improved compared with WeFEND-

# Experiments

## Insight Analysis

- Aim to answer the following questions:
  - Does the distribution of news change with time?
  - Why should we use the reports to annotate the fake news?