

Experiments

Performance Comparison: Weibo

Method	Twitter				Weibo			
	5-Shot		10-Shot		5-Shot		10-Shot	
	Accuracy	F1 Score	Accuracy	F1 Score	Accuracy	F1 Score	Accuracy	F1 Score
VQA	73.62 ± 1.83	76.69 ± 1.23	73.49 ± 2.61	74.69 ± 2.97	76.93 ± 0.71	75.88 ± 0.45	77.80 ± 1.43	76.36 ± 1.77
attRNN	63.04 ± 2.09	60.25 ± 4.63	63.14 ± 2.00	56.60 ± 5.25	76.07 ± 1.63	74.36 ± 2.96	78.09 ± 0.58	77.69 ± 0.35
EANN	70.01 ± 3.58	72.95 ± 2.86	70.56 ± 1.00	67.77 ± 0.80	76.43 ± 0.84	74.51 ± 0.56	77.49 ± 1.95	76.56 ± 1.28
CNP	71.42 ± 2.58	72.58 ± 3.57	72.47 ± 3.61	72.11 ± 5.74	77.47 ± 5.19	77.01 ± 4.66	78.81 ± 1.57	78.07 ± 1.98
ANP	77.08 ± 2.92	79.65 ± 3.81	74.25 ± 0.76	75.16 ± 1.27	77.85 ± 1.67	76.00 ± 3.61	76.52 ± 1.84	73.73 ± 2.78
MAML	82.24 ± 1.54	82.97 ± 1.76	85.22 ± 0.64	84.98 ± 1.70	74.68 ± 0.75	74.16 ± 0.33	75.87 ± 0.33	73.41 ± 0.86
Meta-SGD	74.13 ± 2.31	75.35 ± 2.56	74.63 ± 2.46	74.57 ± 2.74	71.73 ± 1.81	69.51 ± 2.28	73.34 ± 2.35	71.42 ± 2.80
MetaFEND (Improvement)	86.45 ± 1.83 ($\uparrow 5.12\%$)	86.21 ± 1.32 ($\uparrow 3.91\%$)	88.79 ± 1.27 ($\uparrow 4.19\%$)	88.66 ± 1.09 ($\uparrow 4.33\%$)	81.28 ± 0.75 ($\uparrow 4.41\%$)	80.19 ± 1.27 ($\uparrow 4.13\%$)	82.92 ± 0.13 ($\uparrow 5.22\%$)	82.37 ± 0.28 ($\uparrow 5.51\%$)

- ANP & CNP achieves better performance compared with gradient-based parameter meta-learning methods MAML & Meta-SGD.
- This's because parameter adaptation may not be effective when support set and query set do not share the same patterns.

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- MetaFEND can **learn a base parameter** which can rapidly learn use a few example as reference information for fake news detection.
- MetaFEND enjoys the **benefits of neural process and meta-learning model** families.