Adaptive Adversarial Multi-task Representation Learning
(Supplementary)

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1. Classification Accuracy

The error rates of MTL methods for sentiment analysis and topic classification are listed in Figure 1 and 2 respectively.

Table 1: Error rate of MTL methods in sentiment analysis

	BiLSTM					Text-CNN				
	Single task	Uniform scaling	MGDA Weight	AMTRL	AAMTRL	Single task	Uniform scaling	MGDA Weight	AMTRL	AAMTRL
Books	13.00%	14.17%	**12.76%**	14.25%	14.50%	15.00%	14.10%	13.17%	16.00%	**12.75%**
Elec.	20.25%	14.93%	**12.91%**	15.50%	13.50%	17.00%	13.96%	12.82%	13.50%	**12.00%**
DVD	12.00%	14.25%	**12.65%**	14.25%	12.75%	14.75%	13.00%	**13.85%**	15.00%	14.25%
Kitchen	20.75%	14.68%	**13.06%**	15.75%	14.50%	17.50%	14.95%	12.80%	12.00%	**11.50%**
Apparel	13.50%	13.75%	12.26%	13.00%	**10.25%**	15.50%	12.25%	12.29%	14.25%	**11.25%**
Camera	15.75%	13.88%	**12.12%**	8.50%	8.75%	12.25%	13.34%	13.63%	11.00%	**9.75%**
Health	20.00%	14.56%	12.69%	**9.75%**	11.25%	14.50%	13.84%	12.78%	**11.25%**	13.25%
Music	21.50%	13.58%	14.04%	14.75%	**12.75%**	18.00%	**13.13%**	13.71%	16.75%	14.25%
Toys	15.00%	15.57%	13.54%	10.50%	**10.50%**	14.00%	14.37%	12.96%	13.00%	**10.50%**
Video	17.00%	15.55%	13.51%	12.25%	**11.25%**	13.75%	14.22%	12.91%	12.75%	**11.75%**
Baby	16.50%	14.00%	**11.94%**	13.00%	12.25%	16.25%	13.16%	12.12%	12.50%	**12.50%**
Mag.	11.00%	14.39%	12.68%	6.50%	**6.50%**	12.08%	12.08%	13.79%	10.25%	**6.00%**
Software	17.75%	15.40%	13.70%	9.50%	**8.00%**	13.50%	14.70%	14.39%	8.75%	**8.25%**
Sports	22.75%	15.47%	13.76%	**11.50%**	13.00%	18.00%	14.41%	14.89%	11.25%	**9.25%**
Average	16.91%	14.58%	12.97%	12.07%	**11.41%**	15.15%	13.68%	13.29%	12.73%	**11.23%**

Table 2: Error rate of MTL methods in topic classification

	BiLSTM					Text-CNN				
	Single task	Uniform scaling	MGDA Weight	AMTRL	AAMTRL	Single task	Uniform scaling	MGDA Weight	AMTRL	AAMTRL
Comp	21.59%	21.43%	**20.03%**	21.88%	22.93%	11.39%	12.48%	12.03%	11.32%	**11.00%**
Rec	11.91%	10.06%	11.93%	**8.74%**	8.99%	3.77%	4.72%	4.93%	4.21%	**3.77%**
TALK	8.80%	11.91%	**10.10%**	15.77%	11.97%	**4.24%**	5.26%	5.26%	4.12%	4.94%
SCI	22.75%	27.21%	26.75%	24.52%	**21.52%**	14.22%	16.83%	15.96%	16.30%	14.83%
Average	**16.26%**	17.65%	17.20%	17.73%	17.20%	**8.41%**	9.82%	9.55%	8.99%	8.64%