

Supplementary Material for Image Captioning with Sentiment Terms via Weakly-Supervised Sentiment Dataset

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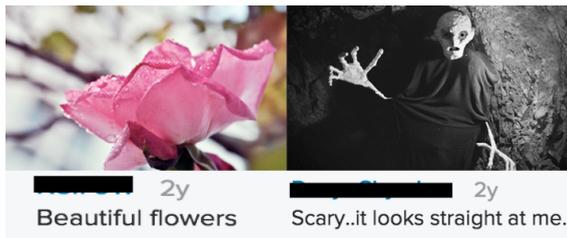


Figure 1: Actual examples of comments on social network services describing the sentiments of the images

Table 1: Size of vocabulary, parameters, dimensions of sentiment features after PCA for each dataset

Dataset	V	V_{senti}	Param	Param _{senti}	Dim _{senti}
Flickr8k	4,448	104	3,855,968	4,186,208	1,290
Flickr30k	11,794	399	7,624,466	7,824,658	782
MSCOCO	14,141	512	8,828,990	9,260,350	1,685

Table 2: Performances of the captions generated by each model on Flickr 8k and Flickr 30k

Dataset	Model	BLEU1	BLEU2	BLEU3	BLEU4	METEOR	Cider
Flickr8k	ImNet	51.1	33.0	20.1	12.6	11.4	39.4
	ImNet+	47.8	29.3	16.6	9.6	10.9	30.6
	Bigram	48.2	29.4	16.7	9.7	10.9	30.5
	Style	44.6	26.3	14.6	8.3	10.4	29.6
	Ours	46.6	28.0	15.6	9.0	10.5	30.3
Flickr30k	ImNet	55.0	35.7	22.9	14.8	10.5	33.0
	ImNet+	51.6	31.9	19.2	11.6	10.4	25.9
	Bigram	51.8	31.9	19.1	11.5	10.4	27.1
	Style	49.3	30.1	17.9	10.8	9.9	22.0
	Ours	51.1	31.0	18.5	11.1	10.1	23.0



cute
sexy



ugly



lovely
beautiful
gorgeous



simple
funny
lovely



beautiful



stunning
gorgeous



unique
cute



sad
unique
young



funny



crazy



lovely
cute



unique

Figure 2: More examples of comment-generated labels.



GT: pedestrians walk by outside a cafe
 ImNet+: a man in a blue shirt is standing in **excess** front of a store
 BiGram: a man in a blue shirt is standing in **united** front of a store
 Style: a group of **lean** people are walking down a street
 Senti: a man in a blue shirt and blue jeans is standing in **hollywood** front of a building



GT: people playing a game in the pool
 ImNet+: a man in a blue shirt is jumping into the **hot** air
 BiGram: a man in a blue shirt is jumping into the **hot** air
 Style: a **young** man in a blue shirt is surfing on a wave
 Senti: a man in a blue shirt is jumping into the **drenched** air



ImNet+: a man in a blue **colored** jacket is walking through a forest
 BiGram: a man in a blue **leather** jacket is walking through a forest
 Style: a man in a blue shirt and a black hat is walking down a **snowy** hill
 Senti: a man in a blue shirt and blue jeans is walking down a **rocky** path



GT: two woman wearing similar shirts walk to the left
 ImNet+: a woman in a white shirt and black pants is walking down the **littered** street
 BiGram: a woman in a white shirt and black pants is walking down the **side** street
 Style: a woman in a white shirt and black pants is walking down the **cleared** street
 Senti: a **casual** woman in a white shirt and a woman in a white dress are dancing



ImNet+: a man is skiing **dirty** down a snowy hill
 BiGram: a man is skiing **gone** down a snowy hill
 Style: a man riding skis down a snow covered **protected** slope
 Senti: a man in a blue **colored** jacket is skiing down a hill



ImNet+: a girl **shallow** in a pink shirt is playing with a toy
 BiGram: a girl defined in a pink shirt is playing with a toy
 Style: a little girl in a pink swimsuit is jumping into a swimming **overlooked** pool
 Senti: a **young** girl in a pink dress is playing with a toy

Figure 3: More examples of generated captions with sentiment terms from all models.