

Supplementary Materials

Anonymous EMNLP submission

1 Implementation Details

In our model, the default initial parameters of all generators follow a Gaussian distribution $\mathcal{N}(0, 1)$. The total number of adversarial training epochs is 200 and the sampling temperature is set to 1.0. We set $\lambda = 1.0$ and $\alpha = 0.1$, and G_d is a seq2seq model based on single-layer RNN-GRU and Luong attention. $\hat{\lambda}$ is set to 1.0, and the number of all epochs $k = 200$, based on performance. G is a single-layer RNN-GRU network and can be easily extended to other types of generators as well. We implement our model based on Pytorch and use a TITAN X graphic card for learning.

1.1 Generated Cases

In Table 2, we show example sentences generated by different models trained on a real-world dataset. From the examples, we see that: 1) Although the sentence produced by the MLE method is longer, it may have unreadable and unreasonable problems. 2) The sentences generated by LeakGAN and TextGAN are more readable, but they are not diversified and relatively short. 3) In particular, compared with all benchmark methods, the sentences produced by our model are more readable, diversified and of better quality.

		a store is blue sink in a water bottle . (<i>Unreasonable</i>)
		serious air force jet mid flight during a cobblestone day , where a flooded street
		a simple bathroom with some wood cupboards .
		a girafee is standng in the spot for a village in parking spot with four hinged cakes trees
	MLE	a jet jet flying away on the runway , in the sky .
		a fat orange motorcycle is low building .
		a bathroom with a sink , a sink , refrigerator and the walls . (<i>Unreadable</i>)
		a living room with a blue roof and green traffic lights blue .
		person sitting in a commercial plane at night .
		a view of a parking desk with two plungers
		a desk with multiple large monitors . (<i>Very short</i>)
		a woman wearing a glass is sitting on a cupboard .
		a kitchen with a shelf area .
	LeakGAN	a man tinkers with his ear .
		a white stove top open from a wood oven .
		a group of men talking .
		a kitchen with a shelf area . (<i>Repeated</i>)
		two people sitting on .
		a man riding a motorcycle . (<i>Very short</i>)
		is to a bathroom with a sink . (<i>Unreadable</i>)
		a man is on a motorcycle .
		a white toilet a sink .
	TextGAN	with a sink and a table .
		a motorcycle in a blue sky .
		a bathroom with a sink .
		a man is sitting on a motorcycle . (<i>Repeated</i>)
		a bathroom with a sink .
		a group of people sat in front of the house together .
		several people stood in front of the bicycle .
		a person is holding a monitor range in the kitchen .
		a woman is riding a motorcycle on the street .
	SLGAN	three adults sat in his car with hats .
		two people in a public parking lot .
		white bathtub , toilet and basin under the bathroom wall .
		an old brick building with a wooden manufacturer next to it .
		a motor scooter parked in the street with a crowd waiting for a parade.

Table 1: Example sentences generated by different models.