

Reviewer #258421:

We are grateful for the reviewer's constructive comments. The followings are our rebuttals for your reviews.

1. "... Technical depth ..."

Our paper is inspired by [Santurkar et al., 2018, ICML18] which is an in-depth study of the mode collapsing problem in GANs. We propose an elegant solution to address data distortion, missing modes, and boundary distortion mentioned in that paper. We obtain convincing experimental results. Finally, our application is novel and is used in a new important domain wherein machine learning, deep learning and domain adaptation can be applied. For these reasons, we strongly believe in the quality of our work from both a technical and application perspective.

Among three papers listed, the first paper [1] is directly relevant to our problem of domain adaptation for sequential data. It is an oversight on our part and we thank the referee for pointing this out. We will include this discussion in our final version of the paper. However, the work in [1] is based on the Variational RNN and the adversarial training (i.e., GAN as in Ganin and Lempitsky, 2015) is applied on the latent representation z^i . It is likely that the mode collapsing problem could still happen due to the nature of GAN. In terms of using adversarial training to close the gap of source and target data, our study goes much further than this by proposing additional components and principles to circumvent the mode collapsing problem based on a recent study in [Santurkar et al., 2018].

2. "... Only align the autoregressive context vector and no explanation ..."

We employed two generators and discriminators and elegantly designed their operating principles to reduce the negative impact of data distortion, missing modes, and boundary distortion. In our paper, we described these phenomena and provided high-level details of how these components together can solve these problems (See Fig. 3 and Sub-section the rationale for our Dual-discriminator Code Domain Adaptation approach). The underlying principle here is that we ensure D_S and D_T obtain high values using both $G_S(x^S)$ and $G_T(x^T)$. We would be grateful if the reviewer could revisit these relevant parts in our paper.

Mode collapse is an inherent problem of GANs. This is because we do not solve the min-max problem properly. Instead, we alternatively update the generator and discriminator. The discriminator tries to discriminate between the source and target data, while the generator attempts to make them indistinguishable. There is no principle to prevent the generator maps the target data in a small region to a region inside the source data and vice versa (See Fig. 3).

3. "... Double the capacity of the discriminator for DCDA ..."

We do not think this helps because the main task here is of the generator to produce appropriate representations. The two discriminators in our model need to cooperate and are not simply equivalent to a double discriminator.