CENG 796 - Peer-review form

Reviewed project ID: Group **4**

Reviewed project's title (title of the paper): Generative Flows with Invertible Attentions

Reviewer name(s): Halil Çağrı Bilgi, Aybora Köksal

Instructions:

- Answer = *Yes*, *No* or *Partial*.
- You may expand sections as necessary.
- For most questions, you do not need to add comments, unless the instructions tell you otherwise.
- "Notebook" refers to "Jupyter Notebook" file that is expected to be named as main.ipynb

Question	**Answer**	**Comments**
Contains a jupyter notebook file	Yes	
Notebook is located at <project_root>/main.ipynb	Yes	
Notebook's first section contains paper information (paper title, paper authors, and project group members' name & contact information) Some good examples: see group03, group10, group11 (and a couple of other groups).	Partial	Paper authors, project group members' names and contact information are absent in the notebook. Images are not loaded properly in VS Code.
Notebook contains a section for hyper-parameters of the model.	Yes	
Notebook contains a section for training & saving the model.	Yes	
Notebook contains a section (or a few sections) for loading a pre-trained model & computing qualitative samples/outputs.	Yes	Loading pre-trained model gives error when device='cpu'
Notebook contains reproduced plots and/or tables, as declared.	No	
Notebook contains pre-computed outputs.	Yes	

Data is included and/or a proper download script is provided.	Yes	
Notebook contains a section describing the difficulties encountered.	No	The section is empty
The paper has achieved its goals and/or explained what is missing.	Partial	Not explained in the notebook but explained what is missing in goals.txt
The notebook contains a section that reproduces the figure(s) and table(s) declared in the goals.	Partial	Notebook contains a section for reproducing qualitative results (Figure 4 in the original paper), however, quantitative results are missing
The notebook also reports the original values of the targeted quantitative results, for comparison.	No	
MIT License is included.	Yes	
As the reviewer(s), you have read the paper & understood it.	Yes	
Implementation of the model seems correct.	Partial	For iMap layers attention module which is proposed in Figure 3 a,b and Eqn 4a,c and 5a,c of the paper exists, implementation seems correct. Eqn. 6 is presumably correctly implemented as attn_mask in reverse propagation. The log of determinant computation in Eqn. 7 exists. It seems correct. The implementation of spatial-channel checkerboard mask proposed in Figure 2c might be buggy. iTrans layer proposed in Figure 3 c,d of the paper and corresponding attention calculations are not implemented. More explanation is given in additional comments
Notebook looks professional (in terms of notation, readability, etc.)	Yes	Readability could be better if the titles of each part (hyperparameters, training) is given with "## Title" as markdown instead of comments in code blocks
Source code looks professional (in terms of coding style, comments, etc.)	Partial	Implementation of checkerboard mask looks unprofessional with variable names deneme_0 cat_deneme_1 etc and there are unnecessarily too many lines of code

Additional comments:

In this implementation, original implementation of mar-scf paper is directly used as a backbone without any modifications and imap.py is implemented by our peers. However, a pseudo code given at the end of the appendix of the paper (Figure 17) is directly used by them with insufficient additions. Proposed attention flow is explained in the paper for 3 pages and there are almost none of It in the implementation. Therefore, their implementation is not working as it should be.