

## Questions/Checklist: (Add details as appropriate...)

1. Does the .zip file that contains the demo contain everything (for packages, this means the requirements.txt) required to run the entire demo on both colab and from a fresh conda install. The main source should be entitled demoN\_topic.tex.  
**Yes. Correct main source name and everything can be found within the zip file, including requirements.txt.**
2. Are there comments in the Demo itself that point to the specific topic covered in lecture pointing to the exact conceptual scope of this demo?  
**Yes. Does a clear job of stating what the content will be covering and the headers remove any confusion around focus of subtopic.**
3. Does the demo try to align notation with lecture to the extent possible, and use comments to explain why and where the notation might differ from lecture?  
**Yes. “Basic” and “Advanced” augmentations align with content discussed in lecture.**
4. Does every cell in the demo run without needing the user to modify anything and do visualizations appear clearly? If not, give comments here...  
**Yes. I did not have to make any edits or modifications to run everything easily from a jupyter notebook.**
5. Does the demo use animations effectively where animations would help convey the relevant idea? If not, give comments here...
  - **No animations, but the images captured the ideas just fine.**
  - **Perhaps seeing multiple intensities of a given transformation side-by-side would be interesting rather than having to rerun it with a random parameter.**
  - **I was not able to see a visible change when playing with the SIGMA values for the Gaussian blurring transformation.**
  - **It does not seem the pixmix.png is used anywhere in the main notebook.**  
**Wondering if that’s something that’s been forgotten or did not load for me?**
6. Is the text in the demo written in correct written English — no spelling errors or grammatical mistakes? If not...  
**“models” → “model’s” in the phrase “models robustness” under Part 3: Advanced Augmentations**
7. If there are images or drawings within the demo notebook:
  - a. Does the demo also include a citation to where the image came from?

- b. If the image/drawing is not cited, is the source code used to generate the image/drawing included in the .zip file? (e.g. if the image was made using Adobe Photoshop, the photoshop source file should be present.)
  - c. If the image is from somewhere else, does the license for that image permit its free use by others?
    - a. **Yes. All images are cited by their respective papers**
    - b. **Yes. The source code to generate loss curves like the one in the notebook is present.**
    - c. **I'm not sure whether the image from stanford.ai permits its free use by others. I'm also not clear where the golden retriever image comes from, so I'm unsure.**
  
- 8. Is the math in the demo correct?
  - a. Are there tests within the demo notebook for verifying the correctness of the math as implemented?
  - b. Does the math match the approach taken in class, or when there is a difference (e.g. comparing PyTorch's implementation of momentum and how it is taught in lecture) are these explicitly called out clearly?
    - a. **No math is present.**
    - b. **Maybe a stronger connection between the referenced idea in homework (i.e. Least Squares + Data Augmentation = Ridge Regression) and what we're doing in this notebook would be helpful in building some basic math intuition for this process.**
  
- 9. If there are calls to python libraries, are all the arguments explicitly specified? (even if you are using default values for parameters, it is important to have them be clearly visible in a demo so that students can see them)
 

**Yes. The default parameters are all shown. However, this is only the case in the notebook, not in the provided python scripts.**
  
- 10. Is the code as written in the demo clear and well commented?
  - **Maybe a quick comment explaining why the permute is necessary for applying the transformation and then displaying the image would be helpful.**
  - **Explaining the arguments with default values in the function docstring in utils.py could be good.**
  
- 11. Are the plots in the demo clear and comprehensive?
  - a. Are there appropriate error-bars on plots that can reasonably have error bars? (if there is randomness involved, there probably should be error bars)
  - b. Are the axes clearly labeled?

- c. Are the choices for axis scale (log, linear, etc.) correct to most clearly illustrate the phenomenon being illustrated?
- d. If there are a small number of points that are being connected with lines, are the points clearly marked?

**Maybe mark the points on the loss curves as per part (d) of this question? I see that was a conscious decision to leave out though. Otherwise, graphs look great, both the canned ones and the one generated from running the model script.**

12. To fully explain and understand the concepts being engaged with using the demo, are there missing examples, calculations, plots, etc. that you feel would be nice to see? Have these been listed out at the end of the demo in a section: "What we wish this demo also had to make things clearer?" The reviewer should feel free to add suggestions here.
  - **An image showing the architecture of ResNet-18 in conjunction with printing out the model may be a little easier on the eyes and help with understanding the print out a little better.**
  - **Although not necessary, it could be cool to see how applying specific transforms, while leaving out others, may influence the model performance (if that yields any discernible difference). Seeing performance enhancements from aggressive data augmentations would be nifty as well.**
13. Any other comments on the demo that would be helpful to evaluate it or make it better for people who might want to learn this material? (Remember, our goal is for the demo to be available on the website along with the scribe notes for all to see.)
  - **Echoing previous reviews, connecting to the more theoretical side could add an exciting element for students to engage with.**
  - **Running ResNet on my own computer took quite some time for 15 epochs. Adding a GPU option, instead of letting everything default to CPU, might be helpful in speeding up the process. The added complication may not be worth the advantage though.**
  - **Overall, I think this demo does a great job of showing what data augmentations are, how we use them, and why we use them!**

## Additional questions just for second-round reviewers

After filling out the earlier questions vis-a-vis the final version so far, please take a look at the reviews submitted so far (there should be three: 0th round by the original demo makers, the first review by the Round 1 reviewer, and the final one by the combined team of demo makers and Round 1 reviewers.).

1. Does the final version correct any and all true deficiencies pointed out by the Round 1 reviewer?  
**Yes!**

2. Did the Round 1 reviewer and the demo makers miss anything during their reviews that they really should have caught with due diligence? (e.g. Missing bad grammar, spelling errors, unclear code, bad plots, or unclear math is pretty bad.)

**I found only one grammar mistake, which I'd say is very excusable.**

3. Do you feel that the Round 1 reviewers did a diligent job trying to make sure that the demo was sufficiently polished considering that there are more than 200 people<sup>1</sup> waiting to play with the demo?

**Yes.**

4. Do you feel that the combined team of the Round 1 reviewers and original demo makers did a good job in trying to get a polished demo prepared? If you feel that they did an exceptionally good job, please point that out as well.

**Yes. By the time it reached me, it looks like they switched the dataset they were using to better show data augmentations visually, added another data augmentation visualization as per feedback, and fixed the bugs that were occurring with image displays. By the time it reached me, it already felt like class material as I was running through it.**

5. Considering that any clear bugs or lack of clarity in the finally posted demo on Ed will result in points being deducted from not just the demo makers but also the Round 1 and Round 2 reviewers, is there anything that you want to add?

**Nope, this looks great.**

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<sup>1</sup> For reference, most published papers have far fewer than 100 diligent readers. So, just because some bug might be tolerated in a paper doesn't mean that it should be tolerated here.