NTIRE 2025 Efficient Burst HDR and Restoration -title of the contribution-

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1. Introduction

This factsheet template is meant to structure the description of the contributions made by each participating team in the NTIRE 2025 challenge on Efficient Burst HDR and Restoration.

Ideally, all the aspects enumerated below should be addressed. The provided information, the codes/executables and the achieved performance on the testing data are used to decide the awardees of the NTIRE 2025 challenge.

Reproducibility is a must and needs to be checked for the final test results in order to qualify for the NTIRE awards. Furthermore, as described in the challenge homepage, this challenge have two constraints:

1. The number of model parameters must be **less than 30.0 M**, and
2. the FLOPs used to synthesis whole single 768×1536 sRGB image must be **less than 4.0 T**.

Therefore, **please make it sure that your submission satisfies this limitations.** Submissions that violates this rule will be rejected.

The competition winners will be decided based on PSNR performance in the model size constraints. The novel and interesting solutions with good visual results are encouraged. Please check the competition webpage and forums for more details.

The winners, the awardees and the top ranking teams will be invited to co-author the NTIRE 2025 challenge report and to submit papers with their solutions to the NTIRE 2025 workshop. Detailed descriptions are much appreciated.

The factsheet, source codes/executables, trained models should be sent to **all of the NTIRE 2025 challenge organizers (Sangmin Lee, Chongyi Li, and Radu Timofte)** by email.

2. Email final submission guide

To: leeleesang2@gmail.com,
lichongyi@nankai.edu.cn,
Radu.Timofte@uni-wuerzburg.de
cc: your_team_members
Title: NTIRE 2025 Efficient Burst HDR and Restoration - [TEAM_ID] - [TEAM_NAME]

To get your TEAM_ID, please register at this Google Sheet. Please fill in your Team Name, Contact Person, and Contact Email in the first empty row from the top of sheet.

In the mail, body contents should include:

1. team name
2. team leader's name and email address
3. rest of the team members
4. user names on NTIRE 2025 CodaLab competitions
5. Model architecture and testing codes, pretrained model, and factsheet download command.
   e.g. `git clone ...`, `wget ...`, or Google Drive download link, etc.

Factsheet must be a compiled pdf file together with a zip with .tex factsheet source files. There is no limitation on the number of pages, so please provide a detailed explanation. You may use this factsheet format for instance.

2.1. Due date

Email final submissions received prior to **March 22nd AOE** (Anywhere On Earth) will be considered.

3. Code Submission

The code and trained models should be organized according to the provided GitHub repository (updated on 14th March). This code repository provides the basis for comparing participants' various models in this competition. Specifically, you should follow the steps below.

1. Register at this Google Sheet to get your `[TEAM_ID]`.
2. Git clone the repository.
3. Put your model script under the `models` folder. Name your model script as `Model_[Your_Team_ID]_[Your_Model_Name].py`.
4. Name your model checkpoint as `Ckpt_[Your_Team_ID]_[Your_Model_Name].[pth or pt]` and put your trained model under the `model_zoo` folder.
5. Modify `My_model` in `test_demo.py` to import your model.
6. `python test_demo.py` measures FLOPs and the number of parameters of your model, and generates the result images.

To ensure a fair comparison between participants, please DO NOT modify other codes as much as possible. Only allow minimal modifications to make your model code work. After confirming that your model is working properly, please send us the command to download your code and trained model weights, e.g. `git clone [Your repository link]` or Google Drive link, etc. Organizers will check the model parameters and FLOPs limits and verify that the submitted images are indeed reproducible.

4. Factsheet Information

The factsheet should contain the following information. Most importantly, you should describe your method in detail. The training strategy (model architecture, optimization method, learning rate schedule, and other hyperparameters such as batch size, and patch size) and training data (information about the additional trainning data) should also be explained in detail.

4.1. Team details

- Team name
- Team leader name
- Team leader address, phone number, and email
- Rest of the team members
- Team website URL (if any)
- Affiliation
- Affiliation of the team and/or team members with NTIRE 2025 sponsors (check the workshop website)
- User names and entries on the NTIRE 2025 Codalab competitions (development/validation and testing phases)
- Best scoring entries of the team during development/validation phases
- Link to the codes/executables of the solution(s)

4.2. Method details

You should describe your proposed solution in detail. This part is equivalent to the methodology part of a conference paper submission. The description should cover the following details.

- General method description (How your model is designed.)
- Representative image / diagram / pipeline of the method(s)
- Training strategy
- Experimental results
- References

Additionally, you can refer to the following items to detail your description.

- Total method complexity (number of parameters, FLOPs, GPU memory consumption, number of activations, runtime)
- Which pre-trained or external methods / models have been used (for any stage, if any)
- Which additional data has been used in addition to the provided NTIRE training and validation data (at any stage, if any)
- Training description
- Testing description
- Quantitative and qualitative advantages of the proposed solution
- Results of the comparison to other approaches (if any)
- Results on other benchmarks (if any)
- Novelty degree of the solution and if it has been previously published
- It is OK if the proposed solution is based on other works (papers, reports, Internet sources (links), etc). It is ethically wrong and a misconduct if you are not properly giving credits and hide this information.

5. Other details

- Planned submission of a solution(s) description paper at NTIRE 2025 workshop.
- General comments and impressions of the NTIRE 2025 challenge.
- What do you expect from a new challenge in Burst HDR image fusion, restoration, denoise and enhancement?
- Other comments: encountered difficulties, fairness of the challenge, proposed subcategories, proposed evaluation method(s), etc.

References