NTIRE 2023 Real-Time Super-Resolution

SEU_CNII
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This factsheet template is meant to structure the description of the contributions made by each participating team in the NTIRE 2023 Real-Time Super-Resolution Challenge. The provided information, the codes/executables and the achieved performance on the testing data are used to decide the awardees of the NTIRE 2023 Real-Time Super-Resolution Challenge.

1. The models will be benchmarked as indicated in `https://github.com/eduardzamfir/NTIRE23-RTSR#evaluation-of-your-submission`.
2. The test set is similar to the validation set, including only 4K native images. Reproducibility is a must. **We will only run and benchmark the models, we will not release or open-source them.** Open sourcing the solution is a must to receive the prizes, up to the team.
3. The winners, the awardees and the top ranking teams will be invited to co-author the NTIRE 2023 Real-Time Super-Resolution Challenge report and to submit papers with their solutions to the NTIRE 2023 workshop. Detailed descriptions are much appreciated: brief description of all models and experiments tested, ablations, visualizations, things that did not work, datasets, pre-trained models, etc. You can share qualitative results via shared folder at google drive, dropbox, etc.

If you participate in both Track 1 and 2, you only need to submit 1 factsheet. This factsheet, and the source codes/models/executables (as specified here) must be sent to **all of the NTIRE 2023 Real-Time Super-Resolution Challenge organizers** by email. We accept download links from your website, google drive, dropbox, etc. When using cloud services, please remember to allow sharing and consider the traffic limit of your service provider. If there is any problem, we will contact the team leader.

*School of Computer Science and Engineering, Southeast University

Organizer name	Email
Marcos Conde	marcos.conde@uni-wuerzburg.de
Eduard Zamfir	eduard-sebastian.zamfir@uni-wuerzburg.de
Radu Timofte	radu.timofte@uni-wuerzburg.de

Email final submission guide

```
 To: marcos.conde@uni-wuerzburg.de,
eduard-sebastian.zamfir@uni-wuerzburg.de,
radu.timofte@uni-wuerzburg.de
cc: your_team_members
Title: NTIRE 2023 Real-Time Super-Resolution Challenge - TEAM_NAME
```

Body contents should include:

a) the challenge name (AND TRACKS): NTIRE 2023 Real-Time Super-Resolution Challenge

b) team name

c) team leader's name and email address

d) rest of the team members

e) team name and user names on CodaLab competitions

f) executable/models/source code attached or download links. We will run and benchmark the models following `https://github.com/eduardzamfir/NTIRE23-RTSR#evaluation-of-your-submission`.

g) factsheet attached. You can also provide a link to **overleaf**. Only we, the organizers, will be able to read it. Factsheet must be a compiled pdf file together with a zip with .tex factsheet source files (including figures with good resolution).

1 Team details

- Team name: SEU_CNII
- Team leader name: Daheng Yin
- Team leader institution and email: School of Computer Science and Engineering, Southeast University; yindaheng98@seu.edu.cn
- Rest of the team members: Baijun Chen, Mengyang Liu
- Team website URL (if any): N/A
- Affiliations: School of Computer Science and Engineering, Southeast University
- Usernames on the NTIRE 2023 Real-Time Super-Resolution Codalab leaderboard (development/validation and testing phases): yindaheng98

Figure 1: YOUR DIAGRAM HERE

- Link to the codes/executables of the solution(s) following `https://github.com/yindaheng98/NTIRE23-RTSR`

2 Contribution details

- Title of the contribution
  PRFDN: High Parallelism Distillation Network For Image Super-resolution
- General method description (Summary)
- References
- have you tested previously published methods? (yes/no) If yes, please specify which methods and the results/problems you found.
- Other methods and baselines tested (even if results were not top competitive).

3 Global Method Description

Please describe your method.

- Which pre-trained or external methods / models have been used (for any stage, if any)
- Which datasets did you use for training? How did you pre-process the dataset?
- Training and Inference description
- Model optimization: how did you design your efficient model? do you use pruning? re-parametrization?
- Quantitative and qualitative advantages of the solution (optional)
- 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

PLEASE ADD A DIAGRAM.
It is OK if the proposed solution is based on other works (papers, reports, Internet sources (links), etc), please **cite** them.

Please fill the following table specifying the technical information (besides writing it), should take 1 minute.

Input	Training Time	Attention	Quantization	# Params. (M)	GPU
(256,256,3)	12h	Yes/No	Yes/No	5 Million	A100

Table 1: FILL THIS TABLE PLEASE

4 Technical details

Please make sure to write about the language and implementation details: framework, optimizer, learning rate, GPU, datasets used for training, training time, training strategies, efficiency optimization strategies.

Any particularities of the solution for this competition in comparison to other SR challenges (if applicable).

5 Other details

- Planned submission of a solution(s) description paper at NTIRE 2023 workshop [YES/ NO].
- General comments and impressions of the NTIRE 2023 Real-Time Super-Resolution Challenge (we appreciate your feedback to improve in future editions).
- What do you expect from a new challenge in image restoration, enhancement and manipulation?