

Mobile AI 2021 Challenge Factsheet

⟨ Title of the Contribution ⟩

Team Members Names

March 16, 2021

This factsheet template is meant to structure the description of the contributions made by each participating team in the Mobile AI 2021 challenge.

Ideally, all the aspects enumerated below should be addressed. The provided information, the codes/executables and the achieved performance on the test data are used to decide the awardees of the Mobile AI 2021 challenge. Reproducibility is a must and needs to be checked for the final test results in order to qualify for the Mobile AI awards.

The main winners will be decided based on the overall performance, and a number of awards will go to novel, interesting solutions and to solutions that stand up as the best in a particular subcategory the judging committee will decide. 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 Mobile AI 2021 challenge report and to submit papers with their solutions to the Mobile AI 2021 workshop. Detailed method descriptions are much appreciated. Note that the paper submissions to Mobile AI 2021 workshops will be double blind peer-reviewed for their contributions and merits.

The factsheet, TFLite models, source codes and executables **should be uploaded directly to Codalab in one single archive**. Only your **last upload counts**, all previous submissions will not be validated. The uploaded archive should contain the following **5 folders**:

- *TFLite/* – folder with **all** TFLite models that you are asked to submit;
- *Factsheet/* – folder with your final factsheet (PDF + LaTeX);
- *Model/* – this folder should contain **main.py** file that restores your final model from a checkpoint (located in the same directory) and converts it to TFLite;
- *Source-Codes/* – folder with codes used to train your final model, should contain the implementation of the model, all loss functions and training pipeline. There should also be a *README* file explaining how to run these codes;
- *Other/* – all other supplementary files should be placed in this directory.

1 Team details

- Team name
 - Team leader name
 - Team leader address, phone number, and email
 - Rest of the team members
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- Your usernames in the Mobile AI 2021 Codalab competitions (used during the development, validation or test phases)
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- Affiliation
 - Affiliation of the team and/or team members with Mobile AI 2021 sponsors (check the workshop website)
 - Team website URL (if any)
 - Best scoring entries of the team during development / validation phases
 - Link to codes / executables (if their size exceeds 500Mb Codalab limit and they were not included to your main submission zip archive).

2 Detailed Method Description

- General method description.
- Model architecture description. Don't forget to mention what optimizations were introduced to improve the runtime and / or accuracy results.
- Target loss functions.
- Model training description.
- Representative image (diagram) of the proposed architecture / solution.

3 Model Optimization and TFLite Conversion

- General model optimization strategies (e.g., *pruning, weight clustering*).
- A detailed description of model quantization methods and tools (if any).
- Any particularities related to TFLite model exporting.
- Model runtime on your own device obtained with AI Benchmark (*device model, runtime on CPU, runtime with NNAPI, runtime with the GPU delegate, runtime with other delegates*).
- Model runtime on the target platform.
- Comment the efficiency of the proposed solution.

4 Other Technical Questions

- ML frameworks used for model implementation, training and exporting.
- Hardware used for model training: GPU / CPU model, RAM size, etc.
- Which pre-trained models / external methods have been used (if any).
- Which additional data has been used apart from the provided Mobile AI training / validation data (if any).
- Results of the comparison to other approaches (if any).
- Results on other datasets (if any).
- Any other particularities of the proposed solution (if any).

5 Other details

- Novelty degree of the solution and if it has been previously published.
- Planned submission of a solution description paper to Mobile AI 2021 workshop.
- General comments and impressions from the Mobile AI 2021 challenge.
- What do you expect from a new challenge related to deep learning on smartphones?
- Other comments: encountered difficulties, fairness of the challenge, proposed subcategories, proposed evaluation method(s), etc.

6 References

If the proposed solution is based on other works (papers, reports, internet sources, etc) — please cite them here. It is ethically wrong and a misconduct if you are not properly giving credits and hide this information.

Sample reference (you can use either plain text or bibtex):

References

- [1] Ignatov, A., Timofte, R., Kulik, A., Yang, S., Wang, K., Baum, F., Wu, M., Xu, L., Van Gool, L.: Ai benchmark: All about deep learning on smartphones in 2019. In: 2019 IEEE/CVF International Conference on Computer Vision Workshop (ICCVW). pp. 3617–3635. IEEE (2019)