This checklist must be submitted as a PDF as part of your submission.

Name of Certifying Engineer(s): Mehrdad Hessar
Email of Certifying Engineer(s): mhessar@octoml.ai
Name(s) of System Under Test: NUCLEO-L4R5ZI, NRF5340-DK

Division (check one):

- ❏ Open
- ❏ Closed √

Category (check one):

- ❏ Available√
- ❏ Preview
- ❏ Research, Development, and Internal (RDI)

Benchmark(s) (check all that apply):

❏ Visual Wake Words √
❏ Keyword Spotting √
❏ Anomaly Detection √
❏ Image Classification√

Please fill in the following table adding lines as necessary:

System Under Test Name	Benchmark	Accuracy/AUC (microTVM with Native Schedules)	Accuracy/AUC (microTVM with CMSIS_NN)
NUCLEO-L4R5ZI	KWS	Top-1: 90.2%	Top-1: 90.1%
	VWW	Top-1: 83.6%	Top-1: 85.8%
	IC	Top-1: 87.5%	Top-1: 87.5%
	AD	AUC: 0.86	AUC: 0.86
NRF5340-DK	KWS	N/A	Top-1: 90.1%
	VWW	N/A	Top-1: 85.8%
	IC	N/A	Top-1: 87.5%
	AD	N/A	AUC: 0.86

For each SUT, is the benchmark Accuracy/AUC target met? (Not a requirement for the Open division) (check all that apply):

❏ Yes (Visual Wake Words … 80% Accuracy) √
❏ Yes (Keyword Spotting … 90% Accuracy) √

This checklist must be submitted as a PDF as part of your submission.

❏ Yes (Anomaly Detection … 0.85 AUC) √
❏ Yes (Image Classification ... 85% Accuracy) √
❏ No, for some combination of benchmark, scenario and SUT

For each SUT and benchmark, did the submission run on the whole validation set in accuracy mode? (check one):

❏ Yes √
❏ No

For each SUT and benchmark, does the submission use the EEMBC Runner? (check one)

❏ Yes √
❏ No

For each SUT and benchmark, is the same code run in accuracy and performance modes? (check one)

❏ Yes √
❏ No

Are the weights calibrated using data outside of the official calibration set? (check one)

❏ Yes
❏ No √

What numerics does the submission use? (check all that apply)

❏ INT4
❏ INT8 √
❏ INT16
❏ UINT8
❏ UINT16
❏ FP11
❏ FP16
❏ BF16
❏ FP32 √
❏ Other, please specify: All models are using int8 I/O and int8 internal layers.

Exceptions are:

KWS: Uses int8 I/O with FP32 internal layers for microTVM with native schedules submission

AD: Uses FP32 I/O with int8 internal layers

What backend does the submission use? (check all that apply)

❏ Vendor backend, please name:
❏ TF-Lite Micro
❏ Micro TVM √
❏ Other, please specify: √

This checklist must be submitted as a PDF as part of your submission.

For the `microTVM with Native Schedule` submission we use microTVM only, and for the `microTVM with CMSIS_NN` we used microTVM with CMSIS_NN integration.

Which of the following caching techniques does the submission use? (check all that apply, ideally none):

- ❏ Caching Inputs between iterations
- ❏ Caching responses between iterations
- ❏ Caching intermediate computations between iterations

Which of the following techniques does the submission use? (check all that apply, ideally none if submitting to the closed division.)

- ❏ Quantization aware training
- ❏ Wholesale weight replacement
- ❏ Weight supplements
- ❏ Discarding non-zero weight elements
- ❏ Pruning
- ❏ Modifying weights during the timed portion of an inference run
- ❏ Hard coding the total number of queries
- ❏ None of the above

Is the submission congruent with all relevant MLPerf rules?

- ❏ Yes √
- ❏ No

If the answer to the above question is no, please explain:

For each SUT, have you filled out the JSON system description file?

- ❏ Yes √
- ❏ No

For each SUT, does the submission accurately reflect the real-world performance of the SUT?

- ❏ Yes √
- ❏ No

Does your submission include the following: (check all that apply)

- ❏ System description file √
- ❏ Code that implements the benchmarks √
- ❏ Code/scripts that train the model(s) (Open Division)
- ❏ Metadata that describes each system-implementation combination tested √

This checklist must be submitted as a PDF as part of your submission.

- ❏ Scripts that set up and execute each system implementation tested √
- ❏ Result logs for each system implementation tested √
- ❏ This Checklist √