

Hacktober FEST challenge 2020

The Intel logo consists of a vertical stack of four squares of varying shades of blue, positioned to the left of the word 'intel'.

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OpenVINO:

<https://github.com/openvinotoolkit>

OpenVINO™ is a toolkit that allows developers to deploy pre-trained deep learning models across multiple platforms. Develop and easily deploy your solutions (especially popular for CNNs!)

Challenge #1: Optimize performance for existing operations and make them run as fast as possible:

- Pad operation optimization
- Split operation optimization
- BatchToSpace/SpaceToBatch operations optimization

Challenge #2: Implement new operations:

- Reverse-3 operation

Challenge #3: Enhance existing operations:

- Add support for an arbitrary shape for MatMul operation.
- Add support for different data types for input in the Unique operation.

Intel® Low Precision Optimization Tool:

<https://github.com/intel/lp-opt-tool>

iLIT is an open-source Python library that automatically quantizes your models from full FP32 format to INT8. You can additionally tune other parameters, such as model size or memory footprint.

Details: This project covers various AI use cases that could be used to showcase Intel AI SW. The workloads supported by iLit span across multiple AI scenarios including image recognition, object detection, recommendation models, natural language processing model, and also neural style transfer models. Developers are encouraged to explore one or more use cases to compare the performance with and without Intel AI SW contributions.

Scope: Developers are expected to use iLit tool to do inference using INT8 for these usecases. This would also require the use of Intel optimized TensorFlow, PyTorch, and MxNet.

Challenge #1: Improve image quality of iLit using neural style transfer.

Challenge #2: Pick a new unsupported model and add its support to the iLIT tool.

Challenge #3: Quality time... File as many meaningful bugs, as you can find!

Challenge #4: Come up and implement with a new tuning knob that can boost iLiT quantitation productivity.

Workload Collocation Agent (for K8S):

<https://github.com/intel/workload-collocation-agent>

Workload Collocation Agent (WCA) reduces the noisy neighbors' effect on your collocated tasks. It increases the task density while ensuring the quality of service for high-priority tasks. Working with us, you can improve your K8S cluster utilization and bottlenecks using cAdvisor and Prometheus for workload profiling with vPMU to equalize resource utilization.

Challenge: Improve your K8S cluster utilization and reduce bottlenecks using cAdvisor and Prometheus for workload profiling with vPMU to equalize resource utilization.

Intel Distribution for Python:

<https://github.com/IntelPython/daal4py>

A simplified API to Intel® DAAL that allows for fast usage of the framework suited for Data Scientists or Machine Learning users. Built to help provide an abstraction to Intel® DAAL for either direct usage or integration into one's own framework.

Challenge: Create daal4py (Intel) sample benchmark to showcase scikitlearn optimizations based on existing Kaggle solution.

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