OpenCV Challenge

[Overview](#)
[Self-Reporting Performance Evaluation](#)
[The list of benchmark datasets](#)
[How to start work on Challenge](#)
[Winning Algorithm Selection](#)
[OpenCV Integration](#)
[Important Dates](#)
[Contact](#)

Overview

The Fall 2014 OpenCV Challenge targets 11 Computer Vision categories: image segmentation, image registration (e.g., feature extraction and matching), human pose estimation, vision-based Simultaneous Localization and Mapping (SLAM), multi-view stereo matching, object recognition, face recognition, gesture recognition, action recognition, text recognition, and tracking.

OpenCV intends to offer an award poll of $50,000 to the best performing implementations of the 5 building blocks in the Fall 2014 list. Although the implementation submissions may be developed in any programming language, the winners must commit to translate their code to C/C++ in an OpenCV compliant format in order to be eligible for the award. All participants must agree to publicly release their code under BSD license (that means that all used 3rd party code also should have BSD or compatible license).

Self-Reporting Performance Evaluation

Besides source code, participants are required to send a performance evaluation report of their algorithms. Both source code and evaluation report should be send to vision-challenges@opencv.org.

OpenCV has identified 2 benchmark datasets for each building block in the list above. We want participants to use these benchmarks to quantitatively evaluate the quality and accuracy of their algorithms. It is expected that participant's solution should outperform or be close to state of the art algorithm.

The list of benchmark datasets

Building Block	Dataset Benchmarks
Image Segmentation	The Berkeley Segmentation Dataset and Benchmark Weizmann Segmentation Evaluation Database
Image Registration	Affine Covariant Regions Datasets Robot Data Set
Human Pose Estimation	PARSE Dataset HumanEva Dataset
SLAM	KITTI Vision Benchmark, Odometry, Stereo (Method uses left and right “stereo” images) TUMindoor Dataset
Multiview Stereo Matching	Stereo – Middlebury Computer Vision EPFL Multi-View Stereo
Object Recognition	ImageNet SUN Database, Scene Recognition Benchmark
Face Recognition	Labeled Faces in the Wild, Unrestricted, Labeled Outside Data Adience
Gesture Recognition	Sheffield Kinect Gesture Dataset ChaLearn Looking at People
Action Recognition	HMDB: A Large Human Motion Database Sports-1M Dataset
Text Recognition	The Chars74K Dataset The Street View Text Dataset
Tracking	VOT2014

How to start work on Challenge

There is no registration requirement to begin work on the challenge. Participants may select a category (or even categories!) where they would like to win and start coding. Teams of any size allowed to work on the challenge. Participants from all countries are allowed. For some countries money transfer is impossible or complicated. That is, a participant should have an international bank account in order to get payment.

Although, implementation programming language is not fixed, winners will have to port they algorithm to OpenCV. That's why using OpenCV and C++ is recommended. We also prepared datasets module to simplify work with datasets. Documentation of this module is available here.

Useful OpenCV links:

- Homepage: http://opencv.org
- Q&A forum: http://answers.opencv.org
- DevZone: http://code.opencv.org
- Documentation:
  http://opencv.org/documentation.html
  http://docs.opencv.org/3.0-beta/
- Tutorials:
  http://docs.opencv.org/master/doc/tutorials/tutorials.html
  http://docs.opencv.org/master/doc/py_tutorials/py_tutorials.html
- Downloads: http://opencv.org/downloads.html
- Installation:
  http://docs.opencv.org/master/doc/tutorials/introduction/table_of_content_introduction/table_of_content_introduction.html
  http://docs.opencv.org/master/doc/py_tutorials/py_setup/py_table_of_contents_setup/py_table_of_contents_setup.html

Winning Algorithm Selection

A committee nominated by OpenCV will select implementation winners. OpenCV will identify existing algorithms for each building blocks with reported performance in the benchmark datasets selected above. OpenCV set a performance target close to the best reported performance (i.e., state-of-the-art). Only the participants who submit source code and evaluation reports showing to outperform this required level of quality will be eligible to win the prize.

If multiple participants satisfy this requirement, the 5 best performers will be selected by the committee to be carefully evaluated. A quantitative performance characterization of these algorithm finalists will be performed according to the same evaluation methodology specified to the authors. OpenCV may use additional testing data to enhance this methodology. The committee will decide on the best tradeoff between execution time and accuracy/quality.

OpenCV Integration

The 5 winning algorithms will be implemented in compliance with OpenCV requirements. OpenCV will contact the authors and reach agreement on schedules to provide algorithm source code compliant with OpenCV. These authors will work with OpenCV towards including their algorithms in the OpenCV

library under BSD license. OpenCV will specify the requirements for OpenCV compliant implementations of algorithms. Basic requirements:

- C++ language
- OpenCV Coding Style Guide
- OpenCV How to contribute

Important Dates

The submission period of the Fall 2014 OpenCV Challenge starts in September 15th 2014 and closes in May 8th 2015. Winners will be announced in June 8th 2015 at CVPR 2015.

Contact

Main challenge page:
http://code.opencv.org/projects/opencv/wiki/VisionChallenge

Mail:
vision-challenges@opencv.org