

Introduction

OpenCV is an industrial-quality BSD-licensed computer vision library: it's awesome, solid, optimized and you're free to do whatever with it, even sell it, no questions asked.

It supports:

- more than 4000 algorithms
- Windows, Linux, OSX, Android, iOS, Windows RT
- C++, C, Python, Java, and soon Matlab
- many optimizations like SSE, MMX, CUDA, OpenCL ...

It also needs help from the community.

KICKASS VIDEO

put numbers (Stats)

History

In 1998, OpenCV has been started at Intel, with the first public release at CVPR 2000 (OpenCV alpha) and 1.0 in 2006. In 2008, Willow Garage took over the project and started funding OpenCV again, which lead to numerous improvements with OpenCV 2.0. Work was mostly contracted to the partner company Itseez, composed of some of the original OpenCV team members, former Intel developers, hence keeping a high level of quality.

Add about Stanley, Streetview, Movies

At the beginning of 2013, OpenCV's industrial support for generic development stopped, in the middle of the OpenCV 3.0 development.

The goal of this Kickstarter is to help finish OpenCV 3.0 while providing you with extra features directly usable in your research/company/product/app.

OpenCV 3.0

API improvements

What will be the major features in OpenCV 3.0 ? Well, a lot has been achieved already but the goal is to get:

- API cleanups, including deprecation of the old C API and refining C++ interfaces, bringing them to the uniform style. That will allow us to maintain very stable OpenCV 3.x API for a long period of time.
- introduction of OpenCV HAL, which will be special low-level API for easier OpenCV acceleration on different platforms, including mobile ones.
- convenient installation packages for Windows, Ubuntu, RHEL/Fedora, MacOSX, better developer framework for iOS.
- support for 3rd-party modules that will allow community to extend OpenCV in a modular way, share their code with other OpenCV users without obligatory integration into the main OpenCV.
- integration of the results from the past GSoC 2013 and other sources (partly done): gPb, text detection, line segment detector, RGBD module, Matlab support, 3D visualization module, structure from motion.
- improved documentation: updated to reflect OpenCV 3.0 API, another round of proof reading, added sample index.

Optimizations

Features

What will fund this Kickstarter Achievement ?

By funding this kickstarter, you will pay for a service or an open source feature/algorithm that the OpenCV foundation will provide during 2014, through:

- contracts with OpenCV professionals (Itseez engineers and collaborators we've had over the years). They will use 25% of their time to complete OpenCV 3.0
- collaborations with industrial partners (like Kitware)
- student grants (under the supervision of an OpenCV expert): just like a Google Summer Of Code but all year long
- interactions with vision researchers: OpenCV has always been well connected with academia, e.g. Jitendra Malik allowed us to port the gPb code to OpenCV and release it under the BSD license.
- exchanges with other libraries: OpenCV collaborated with many libraries before (SimpleCV, FLANN, PCL, ffmpeg ...) and we will keep that synergy during this effort

What will you get when funding this Kickstarter ?

Individuals:

- \$10: Name on contributors website off of OpenCV.org
- \$20: OpenCV Stickers (tough to deliver though)
- \$50 sponsor a bug fix

- you give 100\$ or more: you get a T-shirt in addition (does fieldhouse deliver outside the US)
- contribution to one of those 3 features (50k). If we have money/time, we do it in order of the money we get
 - RGBD module (plane, tangents ...)
 - LINE-MOD inside: training (view generator from mesh), computational speed-up, post-processing (ICP), color cue
 - tracking ? TBD libmv? SfM
 - object recognition tutorials

Put votes towards GSoC'14 priorities for lessor amounts

Industrial:

- 2 day bug response for a year (10 K)
- job posting on the site for a year (5 K)
- placement on the sponsor page (5K for bronze, 10K for silver, 20K for gold, 50K for platinum)
- advertisement on the site

After the 2000 answers we got from the OpenCV survey, we have decided that this kickstarter should focus on **object recognition**. It has been the hottest subject in vision conferences for the past few years and improving it would fulfill many of the needs that appeared in the survey, while globally improve OpenCV.

Itemization

Here are the features we we have chosen to monetize:

----- end of official document, now it's brainstorming-----

Features:

I think we should try to monetize easy things, standard things and things for which we already have partial code (e.g. that happened at Willow)

- 2d features (faster ? More ? Color ? VLFeat interaction ?)
- 3d features (maybe ?)
- primitive detector: normals/planes in RGBD data,
- basic object reconstruction (through SfM, DTAM maybe ? Anatoly had code right ?)
- specific techniques:
 - complete LINEMOD pipeline: training, view generation, color integration, ICP step
 - parts-based object detection from Deva Ramanan (PASCAL challenge winner): we have detection but not convenient training
 - bag of features ? I have some nice transformation code check from Ioannis (helped solve my TOD code). Better than RANSAC
- optimizations:
 - NEON support for * to allow for object recognition on mobile
- specific objects
 - biometrics ? Hands/gestures/faces/face recognition ? “Fastest pedestrian in the west” from Piotr Dollar ?
 - Better text
 - barcode ?
- tracking
 - confirm Antonella's API
 - implement some specific object trackers (not region learning ones like we have but maybe template based ones), maybe a LINEMOD tracker ?
- tutorials for several techniques of object recognition (bag of features, LINEMOD)

Services:

- OpenCV engineer support (within a week, 2 days: different rates. Only offer a limited number of those (10/20))
- consulting ? training sessions ? Through kitware ?
- a spot on the build farm ? Pull request compiled privately ?
- Private code review ?
- Advertisement on the site (banner, link to 3rd party vision software)
- Sponsor page (take the gold/silver sponsor idea)

Misc:

- For features (papers/algorithms), people can give whatever but it is per feature (hence creating a competition between features which is good I think)
- If you pay 100 or more for a feature you get a T-shirt (check transport prices, or just a coupon for \$30 on fieldhouse)
- Monetize a dinner with Gary and vadim at the next cvpr (500 per person ? 10 spots ? Food included).

Job posts.

Old video