2019 OpenCV Technical Committee

- [Markdown Syntax](#)
- OpenCV
  - [OpenCV Home Page](#)
  - [OpenCV Developer Site](#)
  - [OpenCV Meeting Notes Home](#)

[[Meeting_notes]]

Template

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2019-mm-dd

Agenda

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Minutes

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To Dos

- Name
  - ☐ todo

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2019-12-18

Agenda

- Meeting times
- GSoC
- Data augmentation

Minutes

- Might have to change the [meeting time](#)
  - Maybe 11pm California time is the only time that really works out around the world.
- GSoC Ideas
  - Fixing bindings everywhere
    - Issues with binaries, C++11 is not supported in bindings always
    - Want this fixed
  - Ransac improvements
    - [Paper](#)
    - [PyRansac](#)
  - Fiducial Patterns: robust
  - Calibration improvements (utilities)
  - ONNX, some version
    - Whatever ONNX covers should be runnable in DNN
      - Intel not whole standard, but various architectures (OpenVino)
        - One Resnet 50, UNet specific
  - Data augmentation or differential rendering
- Differentiable data augmentation
- Vacations
  - Anna out 1st to 8th
  - Gary out next 2 weeks
  - => **Next meeting will be in Jan 2020**

To Dos

- Gary
  - ☐ Meet with AWS, see if we can get a long term deal
  - ☐ Get Chase foundation set up
  - ☐ Linux foundation AI site
  - ☐ Toyota

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2019-12-11

Agenda

- HW
- Verticals
- Money transfer in the future
- Linux

Minutes

- HW
  - http://jevois.org/
    - http://ilab.usc.edu/
    - Laurent Itti - itti@pollux.usc.edu
    - http://ilab.usc.edu/itti/
  - http://www.raysharp.cn/en/
  - https://luxonis.com/
  - https://www.intelrealsense.com/?cid=sem&source=sa360&campid=2019_q2_egi_us_ntgrs_nach_revs_text-link_brand_exact_cd_realsense-realsense_o-1lngr_google&ad_group=realsense%5Eus%5Erealsense%5Eexact&intel_term=realsense&sa360id=43700043662097307&gclid=CjwKCAiAxMLvBRBNEiwAKhr-nJUl-zj98oLLk8xLaWa0KRjz9cOea_4-uukEw_Yq3KRsljIW_sOV3xoCZxwQAvD_BwE&gclsrc=aw.ds
  - ARCore https://developers.googleblog.com/2019/12/blending-realities-with-arcore-depth-api.html?m=1
  - https://developers.googleblog.com/2019/12/blending-realities-with-arcore-depth-api.html
- Verticals -- collect specialized datasets
  - Security
  - Automotive objects
  - Manufacturing defects
  - Agricultural areas
- Foreign payment
  - Going to switch banks
  - https://transferwise.com/us
  - https://www.xoom.com/
- Linux foundation
  - https://www.linkedin.com/in/ibrahimhaddad/
  - https://www.linkedin.com/company/the-linux-foundation/

To Dos

- Gary
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  - ☐ Linux foundation AI site

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2019-12-11

Agenda

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Minutes

- Alexander Smorkalov is employed by OpenCV.org as full time pull request master for user contributions

Meeting minutes:

1. OpenCV release is on track, will be published in 2 weeks.
2. Vadim Levin implemented script to generate report with PR statistics. Complete report is attached. Current version of the report is attached. The team concluded that the report is useful and we will publish it with Github Pages. AI to @Vadim Levin make experimental page with his own Github account. Alexander Alekhin can move it to opencv_infrastructure, when ready. Current decision is to generate and update the page with regular cadence, e.g. daily with CRON/CI. Vadim and Alexander Smorkalov will work on it.
3. Intel team looks on interactive pages with JS to generate the page and media on the go. Dmitry Kurtaev makes experiments on it.
4. Python 2 branch -- end of Life. Python community stops 2.x branch support. OpenCV team decided to continue 2.x support till dependencies and bindings work properly. The major dependency and indicator is numpy.

To Dos

- Gary
  - ☐ Meet with AWS, see if we can get a long term deal
  - ☐ Get Chase foundation set up
  - ☐ Linux foundation AI site

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2019-12-04

Agenda

- ATOM Tracker
- Plannar patterns
- Update

Minutes

- ATOM Tracker
  - One of the best and very efficient trackers, [ATOM](#) is going to be contributed to OpenCV!
  - Martin Danelljan and Goutam Bhat,
- Plannar patterns
  - Asift https://github.com/opencv/opencv/blob/master/samples/python/asift.py
  - Dmytro Mishkin has git hub repsoitory (on Kornia paper)
    - http://cmp.felk.cvut.cz/~mishkdmy/
    - Github: https://github.com/ducha-aiki
  - Note that sift patent is expiring 2020-03-06
    - https://patents.google.com/patent/US6711293
- Webp OpenCV does support the format
  - https://developers.google.com/speed/webp

> *I am very happy to inform that WebP support is added to OpenCV image processing library. Now WebP images can be read / written and processed using OpenCV library.*
>
> *Please see links*
>
> 1. *https://github.com/Itseez/opencv/tree/master/modules/highgui/src*
> 2. *https://github.com/Itseez/opencv/pull/610*
> 3. *https://github.com/Itseez/opencv/pull/539*
> 4. *https://github.com/Itseez/opencv/pull/463*

> *Glad I have made a small contribution from my part to WebP project.*

- Update

1. Release preparation is on track. Release is targeted to the end of the year.
2. Global library re-work enhancement ideas are tracked on wiki page: https://github.com/opencv/opencv/wiki/Evolution-Proposals
3. Vadim Levin: Python bindings generator test and related fixes are in progress.Vadim L and Alexander A discuss details in PRs. Strict checks -- good idea. Unusual conversions like bool -> float should be prohibited.
4. Vadim Levin implemented initial script to generate infographics about open PRs distribution to understand where we are. The script is implemented with Python and Github API. The next step is to do it daily and publish on web, e.g. Github pages.
5. Half of open PRs do not have labels. Alexander Alekhin set labels for them after merge to collect information about implemented/fixed things for release changelog. Vadim uses labels like "need rebase", "need test" for statistics script and Xperience.AI team will set it more carefully.
6. Vadim Levin started work on extra constructor for cv::VideoWriter. The constructor contains array of key-value pairs for optional parameters. The first parameter covered by new implementation -- video bitrate.
7. Vadim Pisarevsky will travel next week and most probably cannot join the call.

- Look at linux foundation AI website
  - Abraham

To Dos

- Edgar
  - ☑ Send AWS contact info
  - ☑ Send Abraham linux foundation contact
- Gary
  - ☐ Meet with AWS, see if we can get a long term deal
  - ☐ Get Chase foundation set up
  - ☐ Linux foundation AI site

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2019-11-20

Agenda

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Minutes

- Black Friday sell from the courses
- Closed low haning pull requests
- GSoC Pull requests, need tests

- python bindings
- close their work (merge)
  - Alpha matting (2 pull requests)
  - Curating deepnets (is going to work on)

- Everything else gets into December release feature freeze Dec 15
- When we started 97 => 56, now 70, but small
- OpenCV team
  - Looking for a solid tracker that can be out of the box
  - Want Atom, but have an alternative
  - Magnetic lasso, classical
  - Cvat tool help with annotation https://github.com/opencv/cvat
  - Improvement for QR code detection (pull requests) https://github.com/opencv/opencv/pull/15338
    - pdf417 detection https://en.wikipedia.org/wiki/PDF417 should be added

To Dos
- Gary
  - ☐ Finish paypal to GSoC
  - ☐ Atom tracker guy follow up

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2019-11-13

Agenda
- Web access
- Deepnet considerations
- Kickstarter

Minutes
- Give more people access to the web sites

- Set up toolboxes that are for profit

  - Problems with maintenance

- OpenVino

  - Inference engine. Supports all Intel. Needs to run all if it is going to "win"
    - OpenCV trademark name

  - OpenCV inference engine DNN on CPU, but needs GPU
    - Need scalable inference
    - Pull requests many engines with many backends. Intel pushing on running PyTorch and TF
      - DNN, not a conversion, but some work.

    - Work with ONNX MS agnostic to HW, but not SW lldm,
      - OpenCV good support for Linux. Support for standards and HW.
      - OpenCV layer on top of inference engine. CPU's are quite competitive
        - Then ARM, Risk-V

- ONNX

  - Like a standard, but good for recog, but doesn't support detection for example
  - Should we participate in ONNX board?
  - Platform: Intel, Risk-V, ARM and NVidia (leverage what they have. Cuda perhaps)
    - OpenCV should be seamless

- We should begin a kickstarter test

- Development notes:

  1. Xperience.AI team continue work on open PRs and some tickets. Igor is working on QR code related issues. Alexander will work on JavaScript related changes. Current amount of PRs: 80 - in main repo, 47 - in contrib.
  2. Cudev module from contrib is required for OpenCV build with CUDA. Alexander S does initial study of the module and will continue to work on it. The module is header only template library for math expressions and cv-related primitives. Current idea: extract topic functions to cudaarithm, cudaimgproc and other modules from cudev and move remaining part to core library. Possible solutions: OpenCV module or "3rdparty" library in the same way as HAL implementation.
  3. Alexander Alekhin is working on bit-exact MedianBlur implementation: there are a lot of failed tests in core library and contrib. Also found strange MedianBlur usage in SURF (20x20) and ORB.
  4. External developers have found and reported security vulnerability in OpenCV. Alexander added SECURITY.md file to the repo for such cases, Vadim created security@opencv.org list to get private security reports. Intel team will work on the issue handling as it affects OpenVINO and related products.
  5. Vadim will conduct a seminar about universal intrinsics and HAL in Xperience.AI office at 14:00 MSK, November 14. Intel team will join with Hangout (invitation sent).

6. OpenCV team has notes about CI configuration and PR testing options on Wiki (https://github.com/opencv/opencv/wiki/CI-configuration)

To Dos

- Gary
  - ☐ Toyota
  - ☐ Ping for DNN strategy
  - ☐ Kick starter

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2019-11-2019

Agenda

- Crowdfunding
- If more resources come in, devote them to
- Conference possible if developer-centric

Minutes

- Crowdfunding
  - We should explore how a crowdfunding model might work and possibly start an experiment with it

- If more resources come in, devote them to
  - GPU support (full-time developer?)
  - Security -- have a prioritized "point person" on this
  - Embedded support
    - Risk-V
    - [Greenwaves](#)
      - Tensor flow enterprise

    - Coral -- [out of Beta](#)
      - As an aside, new work with architecture learning
        - PROXYLESSNAS: DIRECT NEURAL ARCHITECTURE SEARCH ON TARGET TASK AND HARDWARE
        - [Morphnet](#)
        - Differentiable architecture search [DARTS](#)

  - Movidius/OpenVino
  - Compiler side optimizations
- Conference possible if best of breed, focal, developer-centric
- Synthetic data, domain randomization
- Current OpenCV work
  - dynamic fusion, fish eye algorithm,
  - 4.1.0 Security Cisco
  - Atom Tracker gpl license (good real time performance) DNN

To Dos

- All
  - ☐ Proposals for kickstarter
- Gary
  - ☐ video (Satya may have music)
  - ☐ Contact Toyota
  - ☐ Contact Atom tracker people, see email from Vladimir
- Satya
  - ☐ Need to publish how to get on the blog

2019-10-23

Agenda

- Plans

Minutes

- Crowd funding model *
- Find specific model
- OpenVino
  - Rasperry Pi + Movidius + Camera smart camera
    - Help to promate and people build at scale

  - Jetson nano
  - Major libs and demos installed and work
    - TF will have a presence in microcontroller (TF lite)
      - TF with an embedded camera

- - - ONNX inference engine
  - We don't have to be married to a framework, we can port to all
    - Funding help from the HW vendor
    - Courseware tie-in
- Standardize high-level API
  - Pluggable models
  - Standard API we did with like feature detector
    - But OpenCV DNN API is very simple: load and run model
    - ONNX has standard layers for recognition
      - We can participate in end to end object detection
    - But if we do embedded/low level API
      - We need to think of a list of add value
        - Inference on edge -- tiny details
          - OpenVino allows asynchronous API, latency is hidden
          - Find HW partners
          - Reference design from OpenCV

    - ONNX detection, pose can invent layers, mask-RNN can suggest to committee
      - Detection (pull request)
      - Small micro-controller took half a year
      - [Coral edge device](#) (Tensor flow lite, google pushing Coral)
      - MS has a good ONNX optimization standard. Multiple back-ends
        - plug into ONNX runtime by MS

- Lots of pull requests
  - DNN cuda pull requests

To Dos

- Name
  - ☐ todo

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2019-10-09

Agenda

- Technical Committee

Minutes

- Technical committee
  - Email is dev@opencv.org
  - We are switching this meeting into a technical committee
  - Need to set agenda by email the week before
  - Commercial contributors (in units of developers supported)
  - Running kickstarters for code modules
    - Calibration
    - SLAM

  - Patreon too
    - https://blog.patreon.com/
  - Can have this like blender
    - https://fund.blender.org/
  - Tensor flow
    - https://github.com/tensorflow/addons/blob/master/README.md#core-concepts

- Who should be on the technical committee
  - Profs, but we may not want everything their students do

- How to maintain the DNN modules
  - Each module needs to have a maintainer
  - ONNX: what is the effort to maintain new layer?
    - Need to find the balance of what should be in each new layer

  - DNN can run custom layers (there is a tutorial)
    - Sort of solved technically. Can be put into opencv contib
    - We can add for demos/tutorials etc

  - Modules can have a file that specifies maintainer or not
    - Opencv contrib has about 30 modules
      - hard to know

    - Can ask committers to maintain for 3 years
    - Can review a couple of times a year

- - Can look at tickets
- Intel core team is stable
  - Have 4 interns + 6 engineers
- Anna started to consider pull requests

To Dos
- All
  - ☐ Proposals for kickstarter
- Gary
  - ☐ video (Satya may have music)
  - ☐ Contact Toyota
  - ☐ Send out org structure and 20th anniversery PR pings
- Satya
  - ☐ Need to publish how to get on the blog
- Anna
  - ☐ Set up and get invoice to Gary for full time pull request employee in

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2019-09-25

Agenda
- New Distributed development coming
- GPU/CPU compatibility
- Pull requests
- Blog
- Video
- GSoC

Minutes
New distributed development:

General
- OpenCV development will be distributed between:
  - Intel team (represented by Alexander);
  - Xperience team (initially 1 person + Alex as maintainer): main priority now is healthy PR review and bug fix process;
  - OpenCV China team (led by Vadim, expected to have 4 employees in ShenZhen this winter): responsible for ARM / Embedded device support.

PRs
The plan is to have only a few maintainers able to merge PRs.

- Intel team: Alexander A;
- Xperience team: Alexander S;
- OpenCV China team: Vadim.

It's restricted to merge PRs at 2 AM-10 AM UTC+3 due to nightly builds. Review process: first thing is to analyze header file changes (to avoid incompatibility). While reviewing PR, we can add our patches on top to make the code better / push PR faster.

Roadmap
- Branches: 2.4 is stalled,
- 3.4 accepts only optimizations and fixes.
- 4.2 release is expected in December.

In general, a new version is released once a quarter.

- Starting with version 4.0 source code compatibility is guaranteed and tested automatically.

- Exceptions:

  - contrib,
  - DNN module,
  - Graph API.

- GPU/CPU compatability

  - Sycl

    Sycl is a royalty-free, cross-platform abstraction layer that builds on the underlying concepts, portability and efficiency of OpenCL that enables code for heterogeneous processors to be written in a "single-source" style using completely standard C++

  - Some experimental sycl patches by the Intel team
- Pull requests

- We are hiring a full-time contractor from Deepseez to handle pull requests
  - Deepseez is advancing this
- Needs to be done in coordination to what Intel team is working on
- We will prioritize finishing off GSoC 2019 pull requests first
  - When we are done, Gary will note where those are incorporated in on the [ideas page](#)
- We are trying to set up a distributed team. China team (via Hong Kong and Shenzhen University) will also join in, with some full time developers and probably Vadim too

- Blog

  - Now, below on [https://opencv.org/,](https://opencv.org/) we've started blog posts on
  - Haven't set the protocol yet.

- Video for GSoC 2019

  - They are listed on the [ideas page](#)
  - Gary is looking for a video editor and music maker
    - Satya has bought music that he made in case Gary can't find

- GSoC payments

  - We think by Sept 30th.

To Dos
- Gary
  - ☐ video (Satya may have music)
  - ☑ GSoC pull requests, send out "please help" finish off pull request changes requests
  - ☐ Contact Toyota
  - ☐ Send out org structure and 20th anniversery PR pings
  - ☑ Contribution tab with paypal [link](#)
  - ☑ Set up OpenCV letter head
- Satya
  - ☐ Need to publish how to get on the blog
- Anna
  - ☐ Set up and get invoice to Gary for full time pull request employee in

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2019-09-18

Agenda
- Video GSoC
- OpenVino OpenCV
- OpenCV Business (for profit)

Minutes
- Have to collect videos for GSoC
- OpenVino/OpenCV 100/10
  - Bottleneck in patch review for OpenCV
    - Patch Review -- could use full-time developers

  - Model zoo, acceleration (dldt)
  - Support is the most important thing
    - Need more people to check patches
    - Anna deepseez will help
    - Most pull requests are "low hanging fruit".
      - People are willing to modify requests
      - GSoC pull requests, if they get stale, it gets harder

- Bad to put everything into the graph
  - Separate functions allow much more flexibility
  - OpenVino can't put too much functionality into a graph
  - Kornia though through pytorch
- Do we have data
  - Core functionality, deep learning, video i/o
  - Traditional CV areas (filtering, connected component, annotation tool)
  - Barcode detector

To Dos
- Gary
  - ☐ video (or ask Satya)

- - ☑ Put up final projects on [[GSoC_2019]] ideas page
  - ☐ GSoC pull requests, send out "please help" finish off pull request changes requests
  - ☐ Contact Toyota
  - ☐ Send out org structure and 20th anniversery PR pings
  - ☑ Request GSoC payments Opencv https://payouts.payoneer.com
  - ☑ Set up bank transfer at pay
- Anna
  - ☐ Set up meeting with Gary

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2019-09-04

Agenda

- OpenCV/OSVF is now an official 501(c)(3)
- GSoC ending

Minutes

- OpenCV/OSVF is now an official 501(c)(3)
- GSoC ending
  - Vladimir is reviewing in general 3 pull requests/day
    - Reviewing pull requests but need mentors and/or students to respond
    - Dynamic Fusion needs work
- Hit up Toyota for work
- Future meetings here to make sure pull requests get in and update from Vladimir
- 20th anniversary of OpenCV
  - Make PR about it

To Dos

- Gary
  - ☑ Talk to Intel OpenCV/OpenVino team Vladimir Dudnik; Alexander Alekhim about DNN=>ONNX strategy
  - ☐ Contact Toyota
  - ☑ Send out general request to finish up issues in pull requests
  - ☐ Send out org structure and 20th anniversery PR pings
  - ☐ Send out GSoC payments
- All
  - [^] Look over existing pull requests

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2019-08-28

Agenda

- OpenCV/OSVF is now an official 501(c)(3)
- OpenCV GSoC Evaluations

Minutes

- OSVF.org/OpenCV.org is now an official 501(c)(3) corporation, backdated to Feb 25, 2019!
- GSoC: All mentors have to get their evaluations in by Sept 2nd!
  - See your dashboards
  - **Data blobs** for the projects and spreadsheet of project feedbacks is here
  - **Mentors and student** link
  - **Ideas list** link

To Dos

- Gary
  - ☐ Talk to Intel OpenCV/OpenVino team Vladimir Dudnik; Alexander Alekhim about DNN=>ONNX strategy
  - ☑ Send out reminder letter for mentor evaluations
  - ☑ Send Vadim a pull request message

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2019-08-21

Agenda

- GSoC Final period

Minutes

- GSoC grading period is Aug 19-26
  - Must send out notice to get reviews in
- DNN via ONNX is hard
  - No way of knowing how hard porting a model is
    - Landmarks, segmentation
    - Classification, segmentation, landmarks, validate and high level API
  - Missing many ops for conversion-driven by specific models
  - Could piggyback on another runtime
    - Inference only
    - Compositional heads to fine-tune on different tasks only?
    - Hyperparameter only search given data automl on google does something like this
  - Or go through tensor flow only
  - OpenVino has a separate repository
    - OpenVino would be OK, but ignoring other GPUs is limiting
  - Impacting deep learning-based facial landmark detector, but he got the other parts done
- DNN is crucial to OpenCV going forward if it is not to become just a pre and post processor
  - Can we make it ONNX compliant?
  - If we can get a seasoned developer(s) it would help
  - **TO DO**
    - Set up meeting with
      - Vladimir Dudnik; Alexander Alekhim
    - Get our own developers by raising money
  - Trademark OpenCV
- Mail by Steven Putterman
  - Where to put data
  - Create data drive OpenCV.org website ... get all the data
- Final GSoC goals
  - completed pull requests
    - Monolithic pull requests 🐻
  - unit tests
    - Code must pass the tests
  - documentation
  - movies

To Dos

- Gary
  - [^] Talk to Intel OpenCV/OpenVino team Vladimir Dudnik; Alexander Alekhim about DNN=>ONNX strategy
  - ☑ Push along own developers
  - ☑ Send out GSoC finals message
- Satya
  - ☐ Set up data storage

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2019-07-10

Agenda

- GSoC
- Patents

Minutes

- GSoC
  - Need weekly reports, Gary will write about
    - No update on face, tomorrow. Student was sick
      - Before that, all the official tasks are already done (we are now on stretch goals!)
    - Curating Deep Nets for the OpenCV DNN Module
      - 2 Pull requests are in (cover more layers, now extending high-level domains)
      - ONNX format (weight) ... 4 or 5 hight level domains
        - Not covering full ONNX approach (loop unrolling, vectorized, Halide)
        - Don't know the internal roadmap of Intel. LLVM
          - Sooner or later it will all be unified on the backend (unified C++)
        - Open-Vino (all open BSD or not)
        - Regression into landmarks "domain" (coordinate regression)
    - Data augmentation module

- - - Risk
  - - Improve the performance of JavaScript version of OpenCV (OpenCV.js)
    - - going well
  - - Dynamic fusion
    - - going well

- - OpenCV plans
- - Patents
  - - Possibility of acquiring $80K (but will be $100K later in legal fees)
    - - Keep out of patent troll hands
    - - License to 2 companies to recoup costs

To Dos
- Gary
  - ☐ OpenCV governence
  - ☐ Remind students and mentors for reports every week
  - ☐ Need to know how to access docs and answers list
  - ☐ Contact to Intel team about seamless integration of model zoo and DNN and mentoring them
  - ☐ Get in workshop outline

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2019-06-03

Agenda
- New OpenCV release
- Strategy DNN
- GSoC

Minutes
- New OpenCV release this week or next
- DNN
  - Need active model zoo
  - Need to make sure that all the layers are in DNN
  - Support ONNX completely
    - What version of ONNX? 4, 5
    - With Diego layer coverage is done by cherry picking of models
      - Missing layers, datatypes
    - Importer based on the cherrypicking
      - When you take the model, you only see the first error
      - Would rather see all the list of missing layers
      - There is a list of supported layers
    - What is the roadmap for ONNX?
    - Issues in porting a model
      - Missing in importer
      - Some datatypes not supported
      - Missing parameter configurations
      - Example
        - MDN layer was in DNN but not in importer
        - Alternate implementation -- different issues, loop unrolling

  - Evolved by model cherry picking
  - NVidia inference engine in github already embedded in the tensorflow option
    - Open sourced on github (CUDA) tensor RT stuff
    - Parse over the graph -- ONNX inference
  - Microsoft ONNX inference is useful to look at CNPK (deprecated). Going instead at ONNX runtime
- GSoC
  - Need to get weekly reports
  - Updates for the OpenCV projects
    - Facelandmarks none were trainable
      - Trainable models now
      - No python bindings, now have them (sent and approved pull requests)
      - API 2 disjoint inheritances, now united
      - Wasn't training code, now is
      - The work of 3 people done by one
      - 3D landmark detection paper (2D inferring 3D)
    - Curating Deep Nets for the OpenCV DNN Module
      - Semantic seg, landmarks, mask-RCNN (instance segmentation? Ask Dimitry)

- - 2nd GSoC evaluations July 22, see [GSoC timeline](#)
- Kornica
  - Adam optimization from pytorch
- Courseware (Aug and Oct)
  - 1.4K people (don't have to join immediately) -- closed enrollment temporarily for roll out
  - Only need working knowledge of python
  - 3 planned courses
    - Then Next set will be decided
  - Companies are buying course bundles
    - Can others offer mentoring

To Dos

- Gary
  - ☐ Remind students and mentors for reports every week
  - ☐ Need to know how to access docs and answers list
  - ☐ Contact to Intel team about seamless integration of model zoo and DNN and mentoring them
  - ☐ Get in workshop outline

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2019-05-08

Agenda

- GSoC get mentors started

Minutes

- GSoC
  - Replicate pytorch model zoo (we need named ONNX model -- very convenient)
- Docs and Answers lists -- need to know how to access this

To Dos

- Gary
  - ☑ Get new Intel contact
  - ☑ Add a mentor from inside of Intel for model zoo DNN
  - ☐ Need to know how to access docs and answers list
  - ☐ Contact to Intel team about seamless integration of model zoo and DNN and mentoring them
  - ☐ Get in workshop outline

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2019-04-42

Agenda

- GSoC
- Talks

Minutes

- GSoC
  - Waiting for slots
    - After we get them, we'll use [the spreadsheet](#) for priorities.
    - I like the notion of focusing on a few pieces instead of scattered
    - Face then body would be good themes for DNN
    - Future (not this GSoC)
      - Dual or triplet net for giving a feature distance
      - Segmentation

- Talks
  - May:
    - Huawei OpenCV, Robotics
    - Shenzhen U Robotics (Vadim there)
    - Chinese Academy of Sciences OpenCV (if set up)
    - Baidu
  - Summer:
    - Moscow OpenCV, Robotics

To Dos

- Gary

- ○ ☐ Get new Intel contact
- ○ [-] Apply to Google [Season of Docs](#)
- ○ ☐ Contact to Intel team about seamless integration of model zoo and DNN and mentoring them
- ○ ☐ Get in workshop outline

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2019-04-17

Agenda

- Oss-fuzz -- eliminating vulerabilities in code
- GSoC
- New Websites for OpenCV
- GSoD (Google Season of Docs)
- OpenCV talks

Minutes

- Oss-fuzz
    - ○ Thanks to Google lending us ginormous server farms, we're finding and stamping out lots of subtle potential vulnerabilities in OpenCV.
    - ○ Good reason to switch to the latest updates.
    - ○ Turns out almost all open source is riddled with these, but the Google program is helping **a lot**.
- GSoC
    - ○ I need to get real mentor numbers
    - ○ Then provide priority (min) and all real (max) numbers to Google
    - ○ We have 128 applications and 23 mentors. We'll see what sticks
- Website
    - ○ New [OpenCV website](#) is going live today or this week latest
        - ■ It will give us more interactivity and much better stats
        - ■ OpenCV now gets **2M**(!) downloads **per WEEK**(!)
    - ○ New OSVF Website
        - ■ Couple of days later than OpenCV
        - ■ Need to think how to leverage
            - ■ Need to give sub-admins access to the new site
- GSoD
    - ○ Arg, need to [get proposal in](#)
- OpenCV talks
    - ○ Need to develop a new set of materials for OpenCV
        - ■ Satya gave a list of new stats etc
        - ■ Add in robot demographics
        - ■ Have lots of examples from Arraiy, and other talk material on robotics and startups
    - ○ Series of talks coming up
        - ■ China
            - ■ Shenzhen University
            - ■ Huawei
            - ■ Russia Seeing Machines
            - ■ Cisco
            - ■ Prior talks at Mercedes a few weeks ago and society of artificers

To Dos

- Gary
    - ○ ☐ Get new Intel contact
    - ○ ☐ Apply to Google [Season of Docs](#)
    - ○ ☐ Contact to Intel team about seamless integration of model zoo and DNN and mentoring them
    - ○ ☐ Get in workshop outline
    - ○ [-] Contact Open3D about a possible project
- Satya
    - ○ ☑ Get new OpenCV Website online
    - ○ ☑ Get OSVF website online

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2019-04-03

Agenda

- GSoC
- Google Season of Docs

Minutes

- GSoC
  - Need to get mentors to go through our 272 applications (!) (548 on our student list!)
    - Mentors need to select students from our [application form response sheet](#), column "D" and then.
    - Mentors need to get students to apply through [Google Summer of Code Site](#), help them get to final draft of their proposal.

- Google [Season of Docs](#), need to apply by the 23rd
  - We can recruit some from our list of 548 interested students, but technical writers don't have to be students.

To Dos

- Gary
  - ☑ Remind mentors to go through our [application form](#)

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2019-03-27

Agenda

- GSoC Student Choosing

Minutes

- GSoC
  - We are now in the period where students apply through Google to us
    - We need to send out a reminder message to get Google applications in

  - Model zoo for DNN currently means
    - Load OpenCV/DNN
    - Load Model zoo readers
    - Load models
    - Somehow get a model running in DNN
      - Net want, net in ONNX, and net you want in DNN

    - Needs to be seamless like pytorch
    - Need clearer explanation of how to get a model in
    - This is the [link to the ONNX models](#)
    - The [link to the actual DNN model zoo](#)
      - [Parsing code is here](#)
        - Should be part of the DNN download/code

To Dos

- Gary
  - [^] Contact to Intel team about seamless integration of model zoo and DNN and mentoring them
  - [^] Get in workshop outline
  - [^] Contact Open3D about a possible project
  - ☑ ~~Define a "SLAM"ish task.~~
  - ☑ Add to mentor list
  - ☑ Update timeline
  - ☑ Send out a reminder message to students and mentors to apply during this time

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2019-03-20

Agenda

- GSoC
- Google Summer of Docs
- Chips
- Python

Minutes

- GSoC
  - look into gooogle summer of docs.
  - Get mentors going on sorting through students.
    - 165 applications to opencv from our site
    - 447 Students on our student list. Need to sort down

  - Students need to come up with their actual plan. Mentors need to find and refine
  - Already people on (sample)
    - Facial landmark focus (Satya)
    - Alpha matting (Sunita)

- - - Non deep grabcut, alpha matting
    - DNN GPU (Davis King) Justin
- GSoDocs
  - Here is the [timeline](#)
    - Application is due April 2nd
- Embedded chips. OpenCV should work with
  - Jetson nano
  - TPU
  - Intel
  - Other? Huawei? Smart cameras?
- Python is very important to opencv/vision (OpenCV python wrapper is getting 1M downloads per week!)
  - If you look at the OpenCV docs, for [example here](#), it looks all C++
    - Only when you click to the actual function, for example [getPerspectiveTransform](#) do you see, below the C++ interface is the python interface
      ```
      Python: retval = cv.getPerspectiveTransform( src, dst[, solveMethod] )
      ```
  - Possibly we can use Google summer of docs to bring out the python interface more

To Dos

- Gary

  - ☑ Email mentors to look at [application list](#) and get back to mentors
  - ☑ student list reminder to sign up
  - ☐ Get in workshop outline
  - ☑ Bank information
  - ☐ Contact Open3D about a possible project
  - ☐ Define a "SLAM"ish task.
- Satya

  - ☑ Look into Google summer of Docs how it might be useful for OpenCV

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2019-03-13

Agenda

- GSoC

Minutes

- GSoC
  - Mentors, now 23, will talk on the [mentors mailing list](#)
  - We now have 376 students on the [OpenCV GSoC 2019 mentor-student](#) list
    - And over 100 submitted proposals using our new OpenCV GSoC [application process](#)
  - Think about a larger calibration/3D framework ... I like [openMVG](#), but I'm thinking more of a sort of "SLAM Toolbox" for robotics.
  - Open up a project for better interworking with [Open3D](#). Gary to ask
  - Get in final projects on [ideas list](#) and announce them to [the group](#)

To Dos

- All
  - ☑ **Contact Profs for students/C++ people** We have almost 450 students interested
- Gary
  - ☐ Get in workshop outline
  - ☐ Bank information
  - ☐ Contact Open3D about a possible project
  - ☐ Define a "SLAM"ish task.

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2019-03-06

Agenda

- GSoC
- Workshop

Minutes

- GSoC
  - Long discussion, not written down much. Summary:

- We are going to use an application process similar to [Liquid Galaxy](#)
  - We already have a new mailing list in testing for this: opencv_mentors_2019@googlegroups.com
  - Applicants will select a project title, send motivation, resume, proof of code
    - We will create a google form for this
  - The responses will be filtered by Satya's group to toss out obvious under thresholds
  - The survivors will go to mentors to decide
  - A spreadsheet will be created to make sure each resume has been replied to and processed
- We will encourage only the survivors of the above to officially apply.
- Workshop
  - Gary still has to get outline doc in. Need an answer for financial support

To Dos

- All
  - ☑ Contact Profs for students/C++ people
- Gary
  - [^] Get in workshop outline
  - [^] Bank information
  - ☑ Put up new process
- Satya
  - ☑ Test email
  - ☑ Create google form
  - ☑ Get info to Edgar for his promotion notes
- Edgar
  - ☑ Finish promotion notes

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2019-02-27

Agenda

- GSoC **:sunny: :fireworks: OpenCV is in! :fireworks: :sunny:**

Minutes

- GSoC
  - Recruit students
  - If you

To Dos

- Name
  - ☐ todo

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2019-02-20

Agenda

- Website
- GSoC

Minutes

- Website
- GSoC
  - Asked interns to go through the GSoC process
    - Can log in but obviously nothing else to do
    - Can join our [mailing list](#)
  - Nothing the org can do until Feb 26 when Google decides
  - Haven't talked with Samir, could be good SFM/SLAM lead
  - Slac channel, who is on?

To Dos

- All
  - [^] Contact Professors
- Gary
  - ☐ Ping Bart and Moriah about https://my.studiopress.com/themes/studio/#demo-full
  - [^] Contact Profs for students/C++ people
  - [^] Finish reading workshop/conference doc

- - [^] Send in above doc to Bruce
    - [^] Contract on vision course
    - [-] Post Satya's formal post to Reddit, Twitter, LinkedIn
- Satya
    - [^] Create a formal post for posting, send to others to vet, and then see all above
    - [^] Maybe focus SLAM for GSoC on the ability to run on mobile
- Edgar
    - ☑ Give Gary contacts with Computer Vision Center in Barcelona

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2019-02-13

Agenda

- GSoC ideas
- Future conference
- Differential geometry

Minutes

- OpenCV GSoC Ideas
    - Nothing much to do right now. [Ideas list is here](#)
        - Students are writing mentors directly, must point them to the ideas mailing list https://groups.google.com/forum/#!forum/opencv-gsoc-2019
    - SFM
        - What to do
            - Basic building blocks and whole thing is there in opencv_contrib
            - More real time?
            - Dense?
            - Occipital-ish 3D?
            - Add deepnet descriptors
        - SW base to interact with ARKit *
            - SLAM for mobile
    - Davis DNN-GPU
        - Student good at C++, know or learn Cuda
        - Can take dlib or pytorch
    - Can emphasize the GSoC OpenCV user group the Wiki to Google groups
- Differential geometry -- Decide how to integrate/interoperate w/OpenCV
    - different losses for image reconstruction
    - AR labs
- Future conference/workshops
    - People Computer Vision Center from Barcelona to get involved

To Dos

- All
    - [^] Contact Professors
- Gary
    - [^] Contact Profs for students/C++ people
    - ☑ Make [OpenCV GSoC 2019 Ideas mailing list](#)more prominent on [OpenCV GSoC 2019 Ideas Page](#)
    - [^] Finish reading workshop/conference doc
    - [^] Send in above doc to Bruce
    - [^] Post Satya's formal post to Reddit, Twitter, LinkedIn
- Satya
    - [^] Create a formal post for posting, send to others to vet, and then see all above
    - [^] Maybe focus SLAM for GSoC on the ability to run on mobile
- Edgar
    - [^] Give Gary contacts with Computer Vision Center in Barcelona

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2019-02-06

Agenda

- Business meetings
- GSoC 2019

Minutes

- Business meetings
  - We have started Thursday business meeting of professionals who can move the foundation to higher gear/professional footing. I believe I will post summaries here scrubbed of financial and business private info
    - First priority is to get workshops/conference enagement going
- GSoC
  - We can put more ideas on [our page](#)
  - Current ideas list:

Index	to	Ideas	Below
[Circular Calibration](#)	[Data Augmentation](#)	[GPU backend for DNN](#)	[Binary Neural Nets](#)
[Model Zoo](#)	[Point Coordinate Regression](#)	[Differential Rendering](#)	[Image Processing](#)
[April Tags](#)	[Optical Flow](#)	[Python OpenCV](#)	[Depth Fusion](#)
[Face Landmarks](#)	[Boosted Cascades](#)	[Machine Learning Tutorials](#)	[OpenCV GUI](#)

- Priorities:
  - GPU backend for DNN -- very necessary that this is a complete package
  - Place to get curated DNN models especially for face, body, hands -- anything human
    - I would priortize binary models too, but that will depend on Michael's theoretical/mathematical guidence ... and luck of finding the right student
- Look into LFS on Git for storage of deepnets
- Create a formal post
  - Post to Reddit, Twitter, LinkedIn

To Dos
- All
  - [^] Contact Professors and Students
  - [^] Send out formal posting from Satya
- Gary
  - [^] Post to Reddit, Twitter, LinkedIn
- Satya
  - [^] Create a formal post for posting, send to others to vet, and then see all above

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2019-01-30

Agenda
- Fill out [GSoC ideas list](#) in the proper format

Minutes
- GSoC Ideas List
  - Can draw from the [OpenCV Evolution Page](#)
- Python wrapper stays universal
- Satya posted list, will post to site
- Highest priority is Cuda backend for DNN
  - U of S Calif
- SFM continuation
- Contact Professors
- Data augmentation
  - Should run efficiently on GPU ... OpenGL
  - Minimal OpenGL engine (?)
    - But look at NVidia's render https://www.youtube.com/watch?v=DXsLDyiONV4
  - [Neural Render](#)

Template for ideas list

1. **<Descriptive Title such as "Deep Nets">**
   1.
      - ***Description:*** 3-7 sentences describing the task
      - ***Expected Outcomes:***
        - < Short bullet list describing what is to be accomplished >
        - <i.e. create a new module called "bla bla">
        - < Has method to accomplish X >
        - <...>
        - Resources
          - [For example a paper citation](#)
          - [For example an existing feature request](#)

- - - Possibly an existing related module that includes some new optical flow algorithms.
    - **Skills Required:** < for example: mastery plus experience coding in C++, college course work in vision that covers optical flow, python. Best if you have also worked with deep neural networks. >
    - **Mentors:** < your name goes here >
    - **Difficulty:** <Easy, Medium, Hard>

To Dos

- All
  - [^] Contact Professors
- Vadim
  - ☑ Get mentors and ideas
- Gary
  - ☑ Complete editorial clean up of Idea page
  - ☑ Get point of contact to Vincent to OpenCV Dev team
  - ☑ Get Satya's list up
  - [^] Contact professors
- Satya
  - ☑ Contact student GPU backend for DNN
  - ☑ Sameer for SFM
  - ☑ Adrian for python tutorials
- Edgar
  - ☑ Get mentors and projects up

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2019-01-23

Agenda

- GSoC Ideas

Minutes

- Priority Ideas categories
  - Port DNN to GPU
    - Add a base network that can have top layers learned/tuned and easy access to DNN
    - Binary CNNs
    - Learning CNNs
    - Curate more models
  - Add differential functions
  - Tutorials
  - Improve SFM
  - HighGUI improvements
- Make sure this is all cross indexed to the OpenCV Evolution Wiki

To Dos

- All

  - ☐ All Recruit Mentors and Ideas on the wiki

- Gary

  - ☑ Send Citi bank statements
  - ☑ Recruit mentors: Michael, Reza, Grace
  - ☑ Get a properly formatted idea onto the idea page
  - ☑ Review and sign course contract.
  - ☑ Reset password for Satya's OSVF account.
  - ☑ Connect OpenCV.org website maintainer to Satya
  - ☑ Talk to Python Geometry library for GSOC mentorship
  - ☐ Search for NVIDIA / Intel Connections for sponsorships

- Satya

  - ☑ Get new mentors (Vikas / Ankit) to sign up for the group
  - ☑ Share a document with potential tutorials
  - ☑ Reach out to more mentors
  - ☐ Reach out to OpenCV.com owner
  - ☐ Search for NVIDIA connections

- Vivian
  - ☑ Start to Organize Citi statements

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2019-01-16

Agenda
- Organizational news
- GSoC Project Ideas

Minutes
- Organizational news
  - Satya Mallick will be acting as interim CEO for OpenCV. Gary will take the role of President for OSVF and OpenCV. We plan some new initiatives in corseware, consulting and fund raising
- GSoC Project ideas
  - We spent the entire time updating the general categories of what we want done
    - See the [OpenCV Project Ideas List](#)
    - [Use this format to expand each idea topic](#)
    - Expand the todo list

To Dos
- Name
  - [> <] ALL: Start expanding the [ideas list](#)

[[Meeting_notes]]