High level diagram of the most-used Collective Knowledge workflows and components (CK)

User interfaces

Users can pull and run shared workflows using simple CK command line on practically any platform

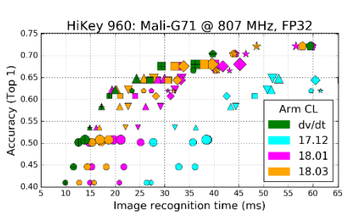
cKnowledge.org/shared-repos.html
cKnowledge.org/shared-programs.html
cKnowledge.org/portable-workflows

```
$ ck pull repo:ck-tensorflow
$ ck run program:tensorflow

$ ck pull repo:ck-mxnet
$ ck run program:mxnet
```

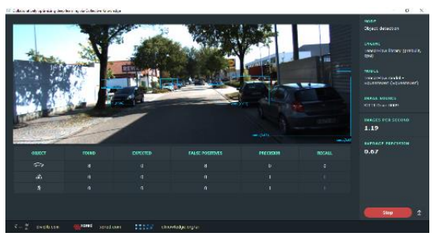
Users can share and visualize results from crowdsourced experiments (such as AI/ML/SW/HW autotuning and co-design across diverse devices from cloud to edge) via CK web service with a unified JSON API

cKnowledge.org/dashboard



Organizations can develop their own GUI on top of CK (using unified CK APIs) or integrate CK with their projects and (cloud) services

cKnowledge.org/partners.html



Users can share stable Docker images where CK orchestrates and crowdsources experiments. See this Docker+CK image for Intel Caffe in AWS cloud:

cKnowledge.org/ck-aws-intel-docker

```
ck pull repo:ck-docker
ck search docker
ck run docker:ck-ubuntu-18.04
```

Customizable workflows

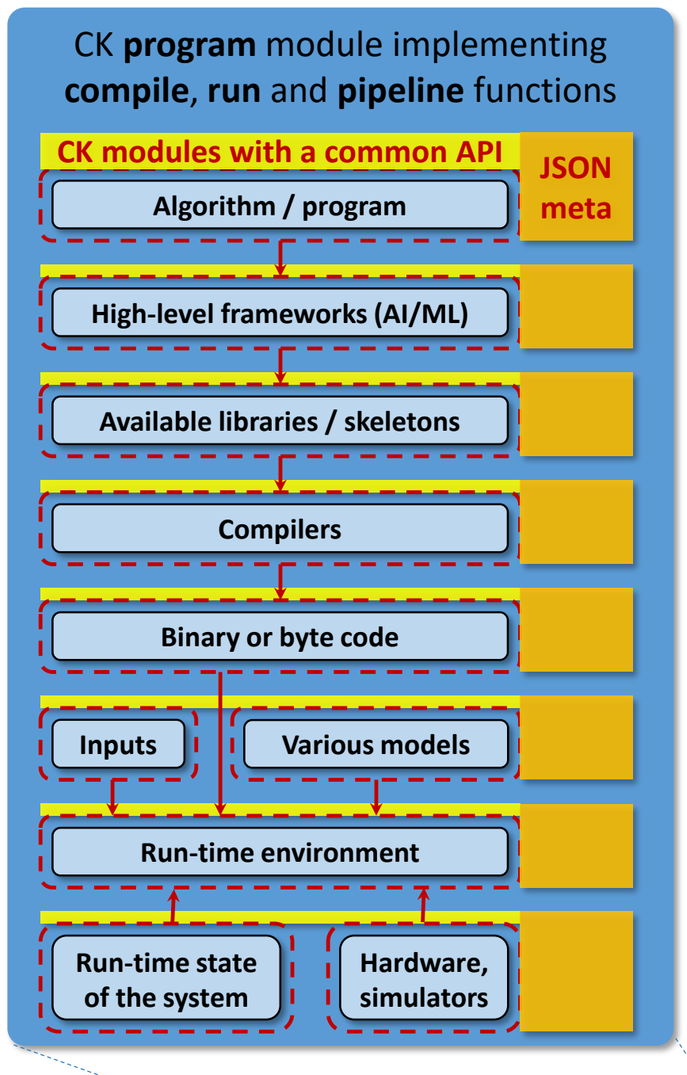
Users can assemble portable and customizable workflows with a common CK interface by using just a few CK kernel functions and connecting together shared CK modules

cKnowledge.org/shared-modules.html
cKnowledge.org/ck-kernel-functions.html

Example of a program workflow

cKnowledge.org/shared-programs.html

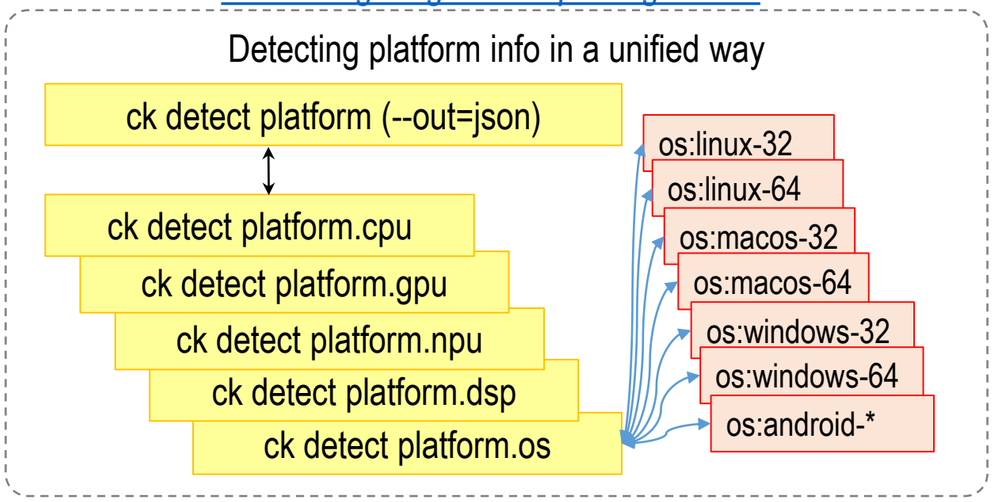
```
$ ck pull repo:ck-crowdtuning
$ ck search program
$ ck load program:cbench-automotive-susan --min
$ ck compile program:cbench-automotive-susan
$ ck run program:cbench-automotive-susan
```

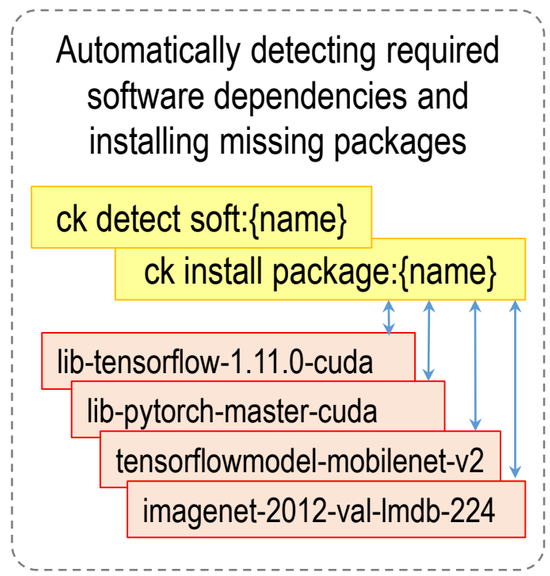


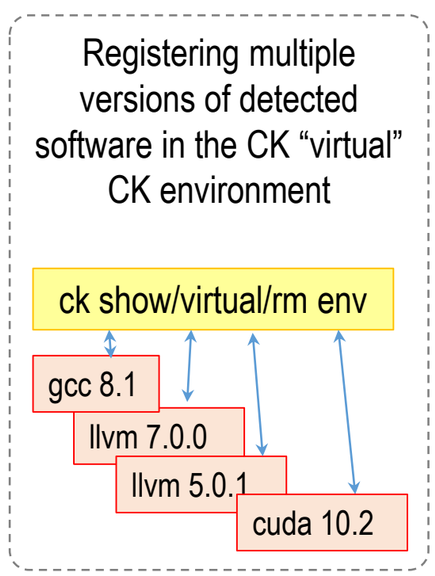
CK modules to adapt workflows to diverse platforms

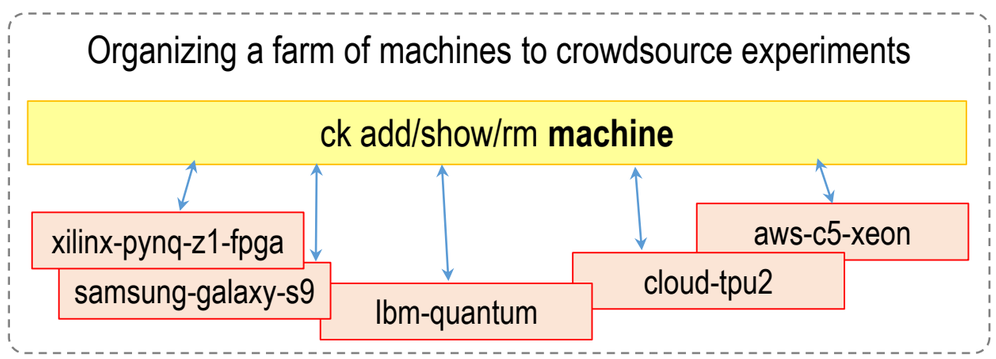
Users share and continuously improve CK modules which help workflows to automatically adapt to diverse and continuously evolving platforms

cKnowledge.org/portable-workflows
cKnowledge.org/shared-soft-detection-plugins.html
cKnowledge.org/shared-packages.html



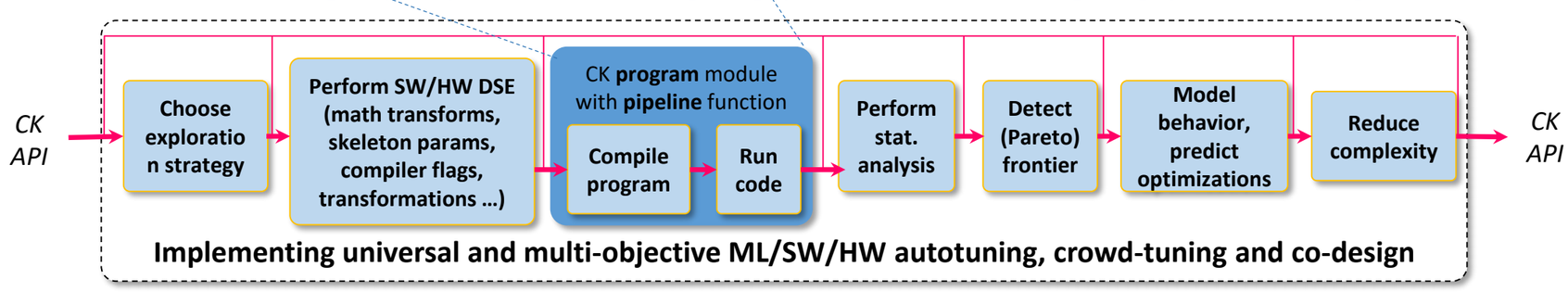






Users can develop even more complex workflows on top of "basic" workflows

cKnowledge.org/request *cKnowledge.org/quantum* *cKnowledge.org/rpi-crowd-tuning*



CK website: cKnowledge.org **CK documentation including Getting Started Guide: github.com/ctuning/ck/wiki**