



TrackerTLD

Performance Report

2017-12-28

OPEN AI LAB

Revision Record

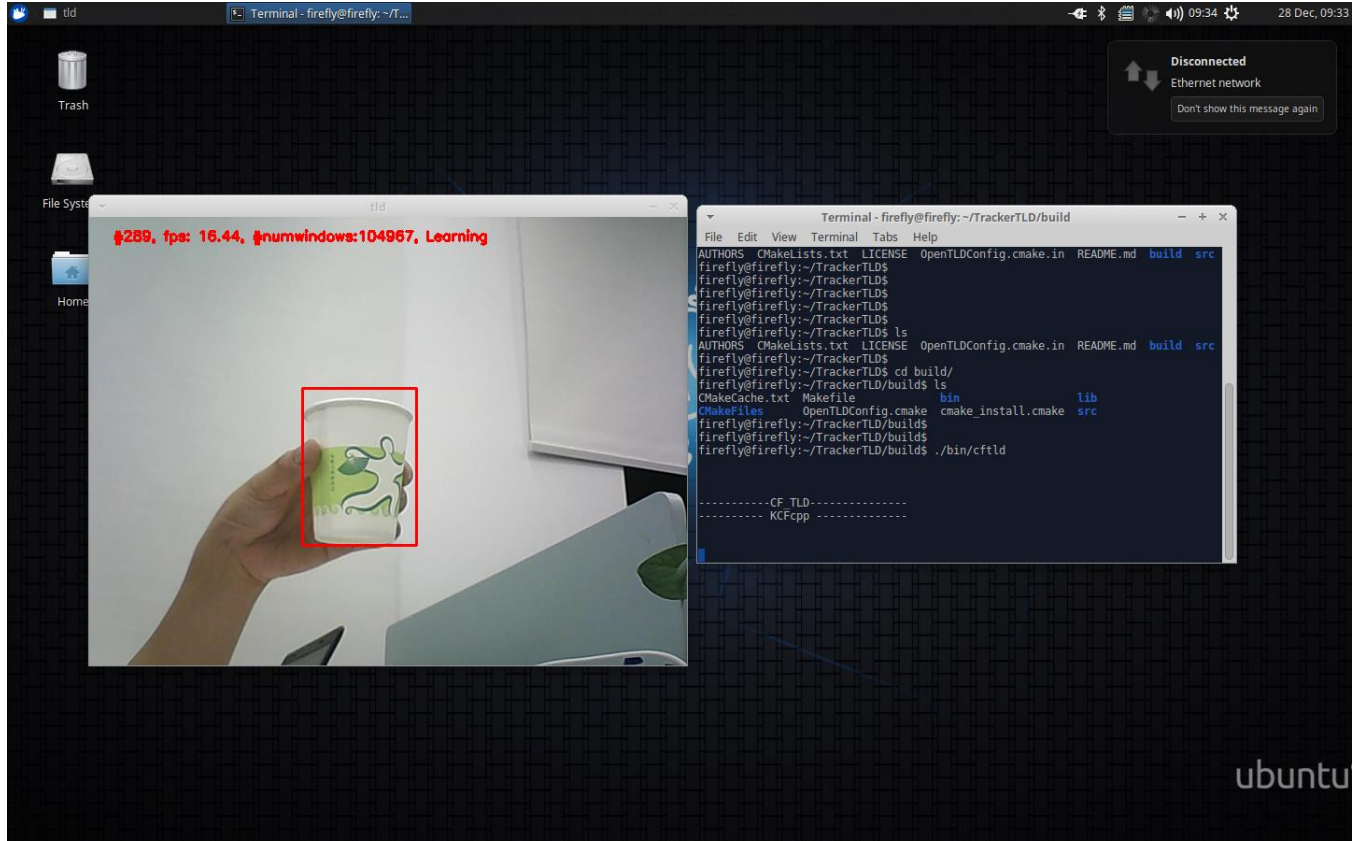
Date	Rev	Change Description	Author
2017-12-28	0.1.0	Initial version	乐毅
2018-01-02	0.1.1	Add average frame ratio.	乐毅

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1 Purpose

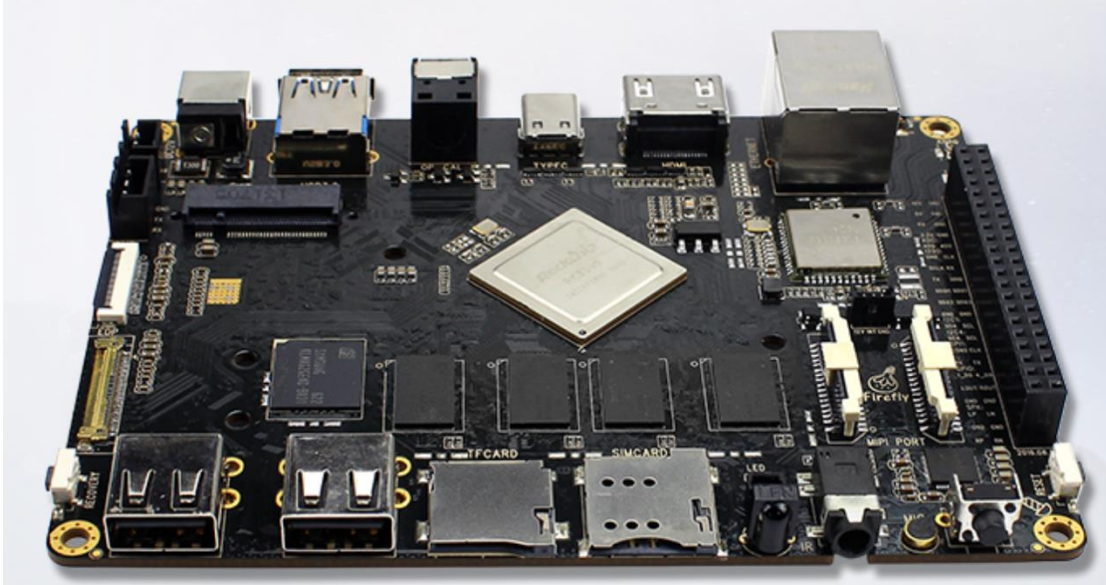
TrackerTLD is a visual tracker app released by OPEN AI Lab. This Report is TrackerTLD algorithm performance report on RK3399.



2 Test Environment

2.1 Hardware SoC : Rockchip RK3399

- GPU: Mali T864 (800MHz)
- CPU: Dual-core Cortex-A72 up to 2.0GHz (real frequency is 1.8GHz); Quad-core Cortex-A53 up to 1.5GHz (real frequency is 1.4GHz)
- Camera: 1080P USB Camera



2.2 Software Environment: Ubuntu 16.04

- Operating System : Ubuntu 16.04 SMP
- OpenCV: 3.3.0
- TrackerTLD Demo app
- Test object: This distance from a paper cup to the camera is about 0.5m.

NOTE: Different object size ,distance and background may lead to the small change in performance data.

3 Performance

The result of TrackerTLD running on RK3399 as following picture:

3.1 Multi-CPU performance

Multi-CPU scheduled by Linux kernel without any CPU binding. The input video is 480P(640x480), format is YUYV(YUV422), the CPU performance as following table.

	TrackTLD-KCF	TrackTLD-DSST
MultiCPU Linux	60ms/frame	80ms/frame

The average frame ratio (100 frames) on MultiCPU as following:

	TrackTLD-KCF	TrackTLD-DSST
MultiCPU Linux	15.63ms/frame	14.63ms/frame

3.2 Single CPU performance

3.2.1 Single A72 CPU performance

	TrackerTLD	TrackTLD-DSST
On CPU5 A72@1.80GHZ 480P	45ms/frame	47ms/frame

The average frame ratio (100 frames) on ONE A72 as following:

	TrackerTLD	TrackTLD-DSST
On CPU5 A72@1.80GHZ 480P	50ms/frame	55ms/frame

3.2.2 Single A53 CPU performance

	TrackerTLD	TrackTLD-DSST
On CPU1 A53@1.42GHz 480P	160ms/frame	155ms/frame

The average frame ratio (100 frames) on ONE A53 as following:

	TrackerTLD	TrackTLD-DSST
On CPU1 A53@1.42GHz 480P	185ms/frame	217ms/frame

