Camera calibration

Second approach

By wilderd Mamani & Roxana Soto

Outline

Pipeline

- Filters: gauss
- adaptative thresholding

Time and Complexity

- Frames por seconds
- Total frames for pattern recognition

Tracking

Pipeline

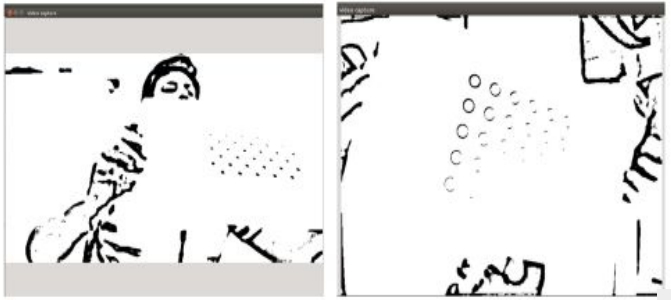
- Gauss filter
- Segmentation (threshould)
- CANNY
- ROI
- Noise Reduction
- Tracking
  1. DFS,MET,AM
  1. ConvexHull
  2. rotateRectangule using minAreaRec

Gauss Filter

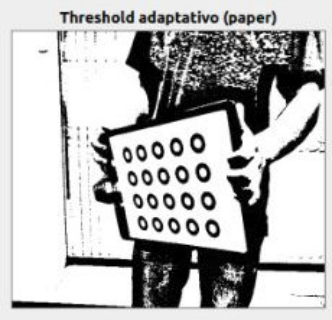
We do the gauss blur for the gray image

Adaptive thresholding

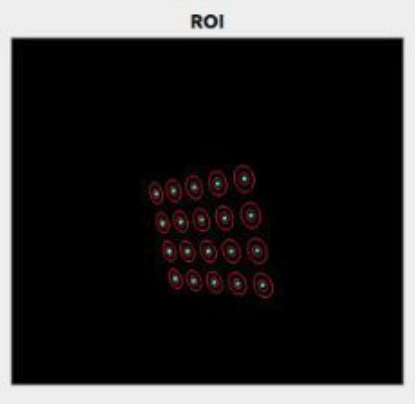
Basic global threshold

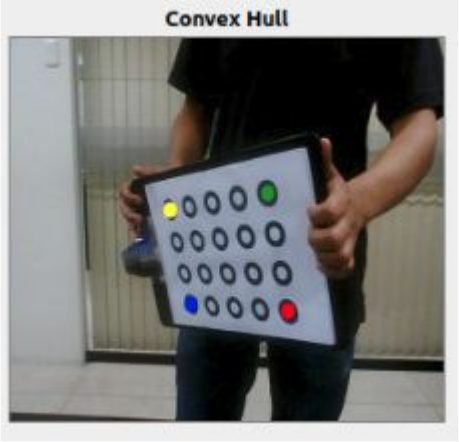


Adaptive threshold

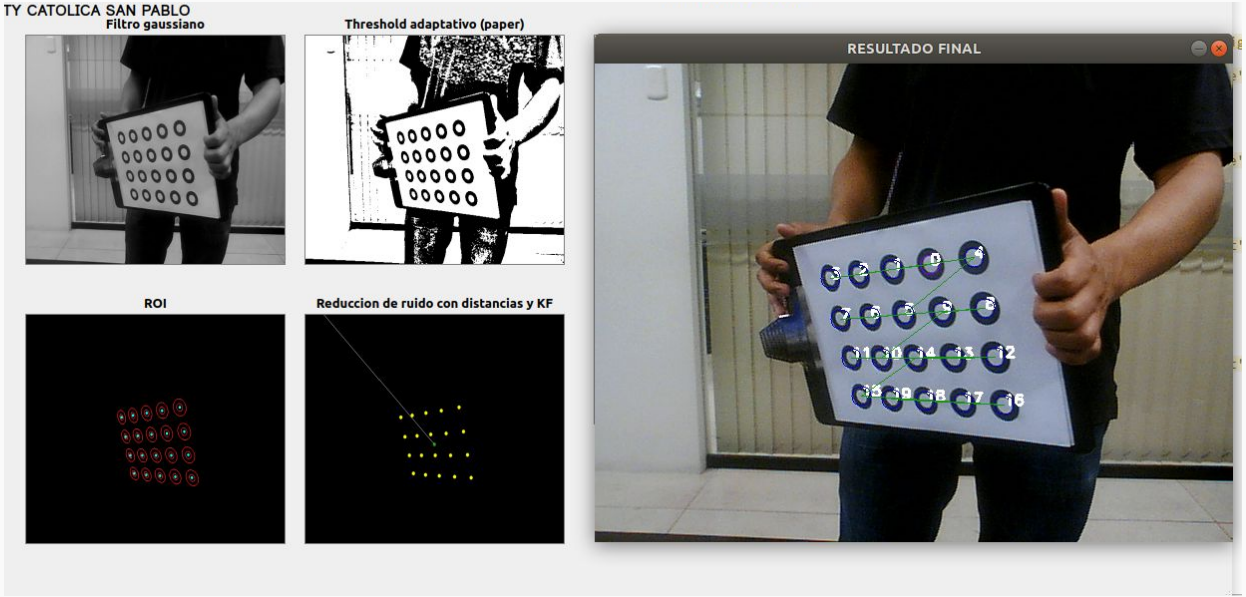


ROI and Tracking(1)

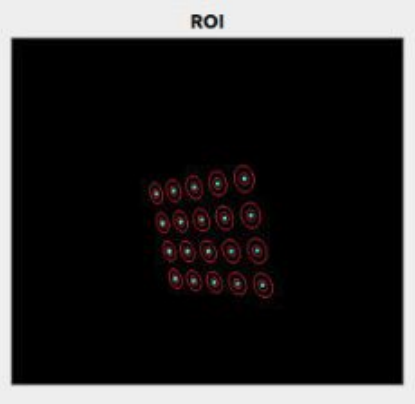




RotateRectangule using minAreaRect



ROI and Tracking(2)



Time and accuracy

Time per frames are AVG: 13.05

~ 14.5988(visual included) miliseconds (Opencv)

Accuracy 86.02 %

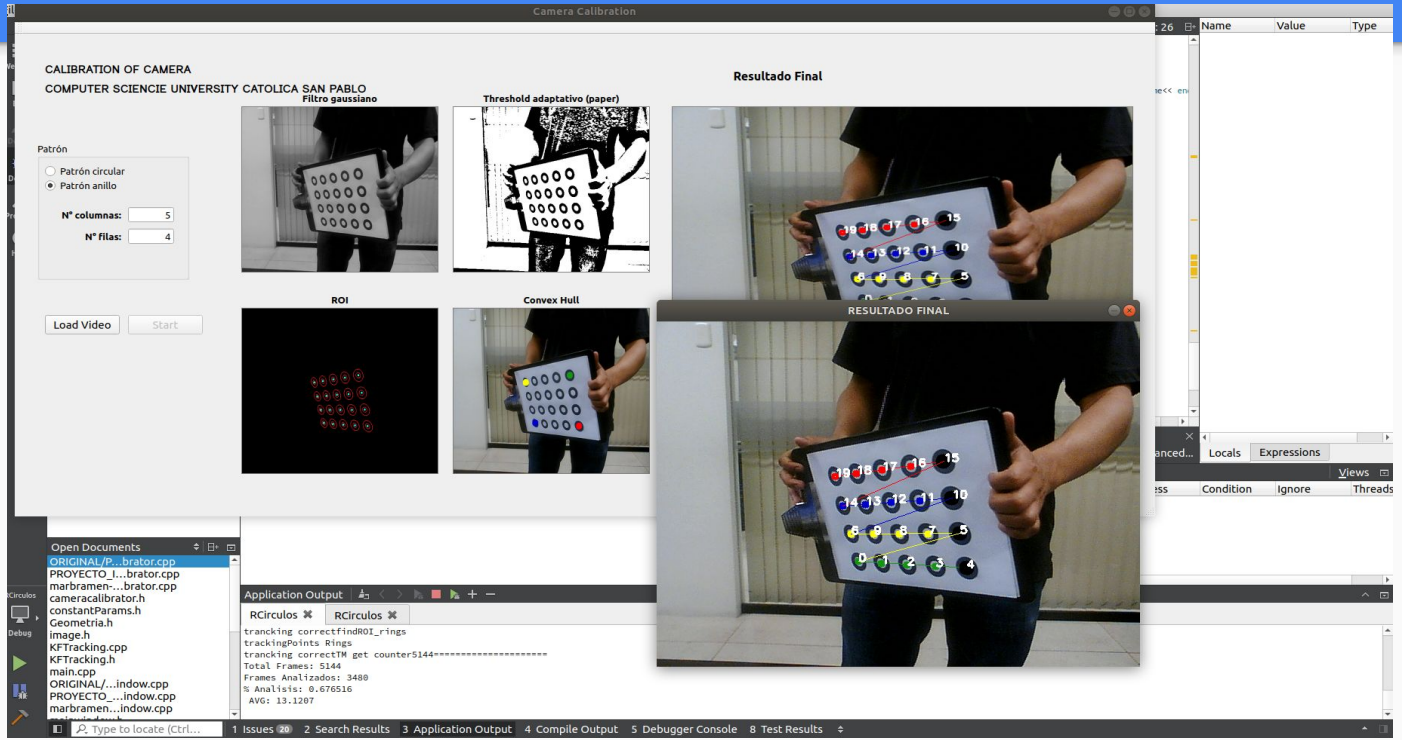
Total frames: 5144

Frames reconocidos : 4425

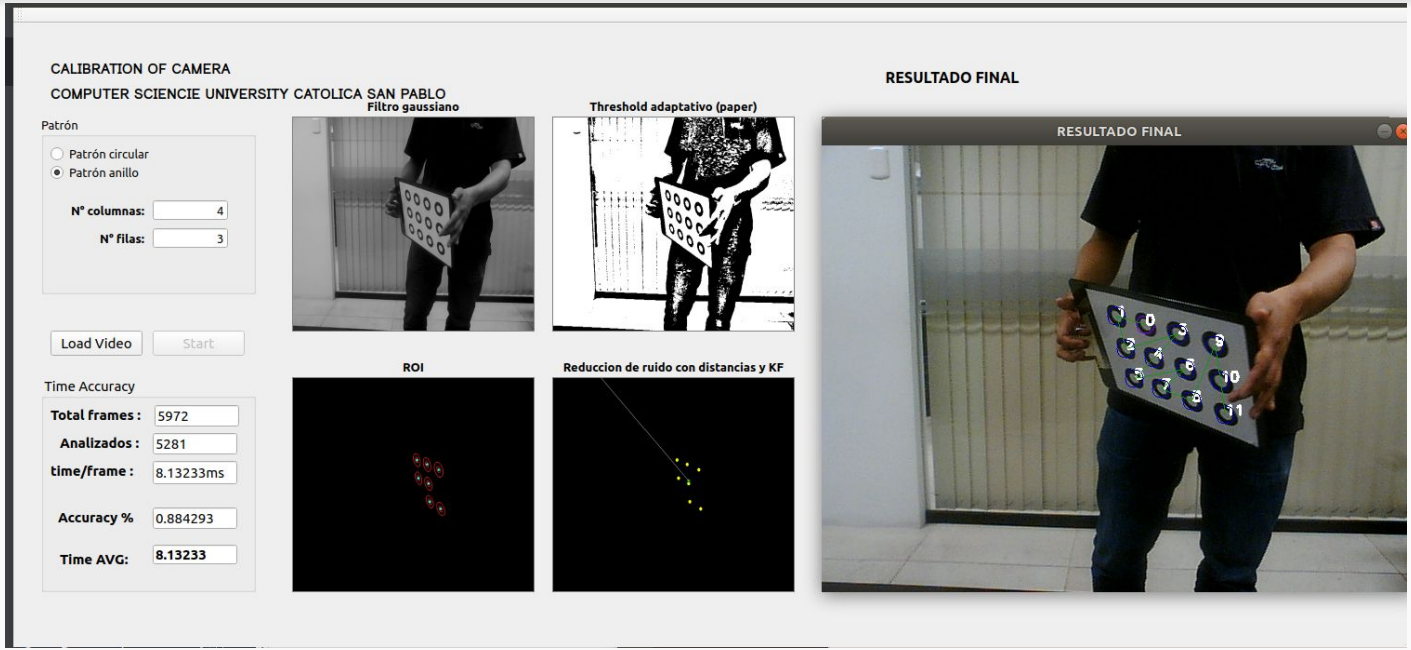
```
TickMeter tm;
switch (pattDetector->getCurrentPattern()) {
            case PATT_CIRCLE:
            tm.start();
            status = pattDetector->processingCirclesPattern(keypoints);
            tm.stop();
            break;
            case PATT_RING:
            tm.start();
            status = pattDetector->processingRingsPattern(keypoints);
            tm.stop();
            break;
            }
   cout<<"TM get counter"<<tm.getCounter();
            double average_time = tm.getTimeMilli() / tm.getCounter();

            cout << "=====================\n";
            cout << "Total Frames: " << framesTotal << "\nFrames Analizados: " <<
framesAnalyzed << "\n% Analisis: " << (framesAnalyzed * 1.0 / framesTotal) << "\n
AVG: "<<average_time<< endl;
            cout << "=====================\n";
```

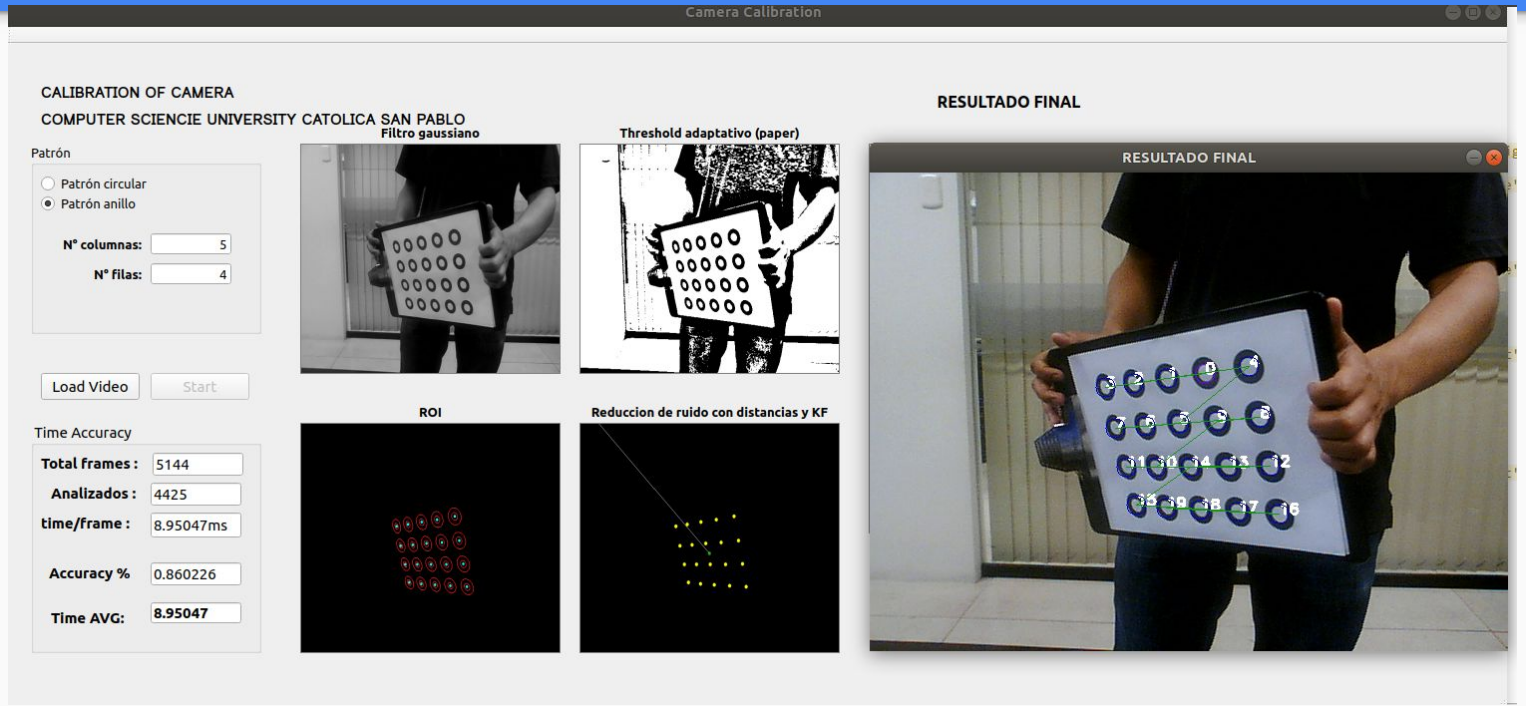
Test with Convex Hull



Test 1 with cv:rotateRectangule



Test 2 with cv:rotateRectangule



Videos	Total Frames	Frames Analizados	Analisis %	AVG (ms)
Video1	5972	5281	88.42	8.13
Video2	5144	4425	86.02	8.95

Thanks!