**Optical Flow Project**

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**Technion**

1. Introduction

1.1. Optical-Flow background

1.2. Object-Detection and Video-Registration

1.3. AMBA APB

1.4. Paper study

2. Accelerator Implementation

2.1. Block diagram

2.2. Block description (+flow-chart)

2.3. Pins description

2.4. Clocks and Resets

2.5. Interfaces description

2.6. Sub-units description

2.7. Performance

2.8. Synthesis

2.8.1. Technology and Constrains (SDC)

2.8.2. FloorPlan

2.8.3. Area and StaticPower

2.9. Programmer’s Guide

3. Zero-order ("aliveness") verification

3.1. Block Diagram

3.2. Test-Plan

3.3. Test-Results

4. Summary

(-) Project's summary

(-) Take message home

(-) Next steps

References

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**objects-tracking**, aka objects-registration within this context, i.e. processing a video-stream and keeping track of each detected objects uniquely among the incoming frames.

**Problem that object registration deal with:**

The objects-tracking performance appears to be highly sensitive with the scene setup (illumination, overlaps, etc.) and with the video characteristics (fps, stride, resolution, etc.). Moreover, objects might go in and out from the frame, so that there might be incontinous detection of multiple objects. That might be the reason that only few frameworks try to tackle this problem, e.g. [ByteTracker](https://github.com/ifzhang/ByteTrack" \t "_blank), and neither appears to act as a complete solution. It therefore appears that each specific problem requires its own special sauce of objects-tracking handling.