Status Report:
Coordinated Gameplaying Robots

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Project Overview

Coordinated Gameplaying Robots

Multiple Robots working in a coordinated manner to play football.

Progress Overview

Expected delivery

September 1, 2016

Recent progress

- Ball position and velocity tracking
- Hardware Implementation

Biggest problem

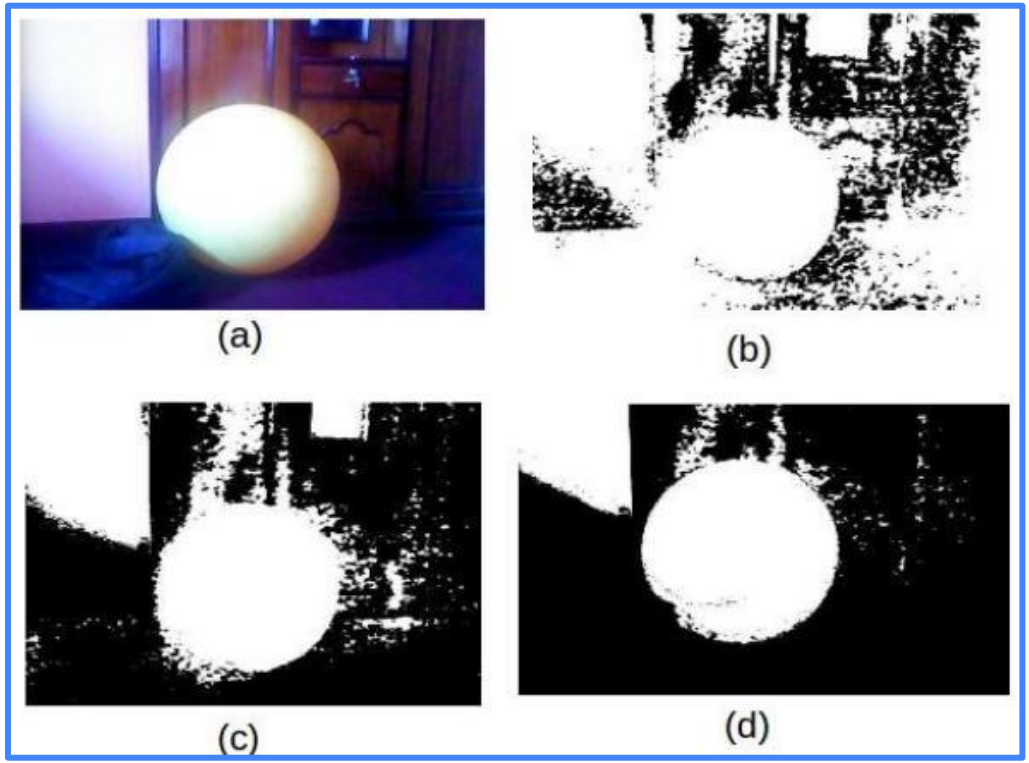
Real-time requirement of the project.

Progress - Software

Ball Position and Velocity Tracking (2D)

- The calibrated ball in a controlled environment can be tracked
- The program can further find out its velocity

Ball Tracking

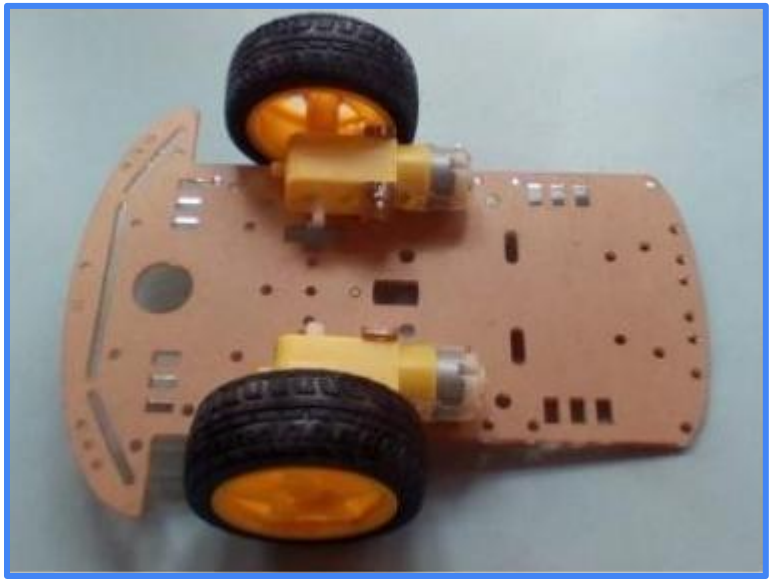


Feature extraction of the ball

Progress - Hardware

Implementation of the Platform

- The mobile platform needed for the project has been implemented
- Platform currently works as an open-loop system



Attention areas

Communication System

- RF communication seems unfeasible
- Wi-Fi communication causes time-lag

Motor Precision

- Slippage errors occur even when using rotary encoders
- IMU introduces drift errors in the system
- Camera has low resolution for error correction

Schedule

Study and Research

Hardware Prototype
(30%)

Complete Product

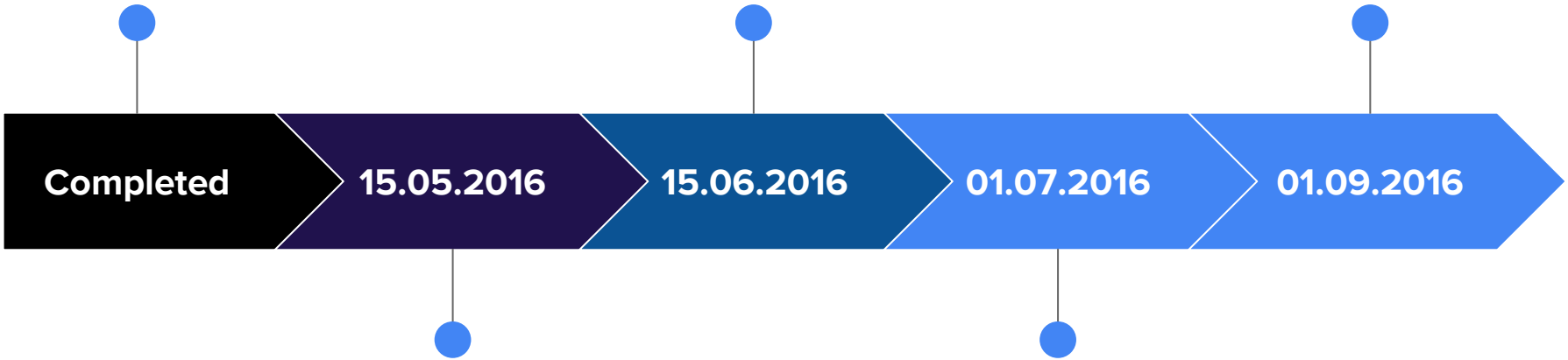
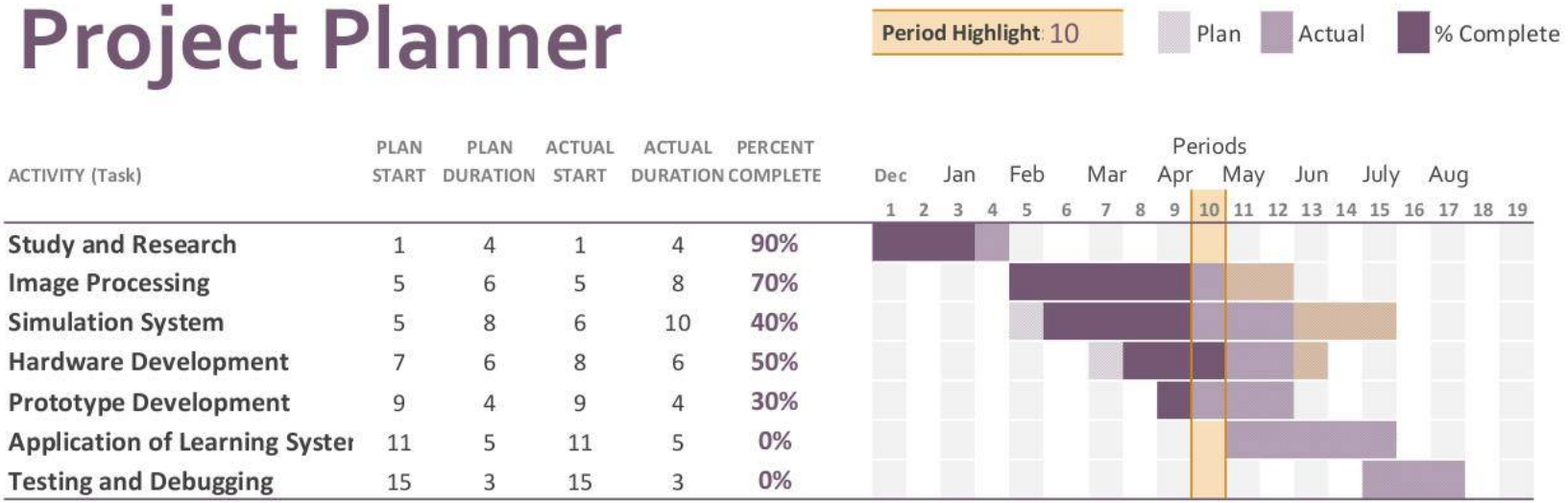


Image Processing
(70%)

Product Prototype

Gantt Chart



ACTIVITY (Task)	PLAN START	PLAN DURATION	ACTUAL START	ACTUAL DURATION	PERCENT COMPLETE
Study and Research	1	4	1	4	90%
Image Processing	5	6	5	8	70%
Simulation System	5	8	6	10	40%
Hardware Development	7	6	8	6	50%
Prototype Development	9	4	9	4	30%
Application of Learning Syster	11	5	11	5	0%
Testing and Debugging	15	3	15	3	0%

Figure 6 Project Schedule Gantt Chart

Next steps

- **Hardware Control System**

  An implementation of control algorithms(PID) and sensor fusion for feedback based precise hardware control.

- **Learning System**

  The learning module by which the robots learn utilizing a certain fitness function

- **Integration, Testing and Debugging**

  Integration of different parts of the project and their testing and debugging to bring forth a complete product.

Thank You!

Any Questions?