TSB-funded Project 'TADD'- Trainable vision-based anomaly detection and diagnosis Technical Report for July 2014

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Chapter 1

Introduction

This is the July 2014 report for the project TADD. The core topic of this report is software development for QA-TADD. I will be away on training course from 21 to 25 July 2014, consequently this report covers research and development in QA-TADD for the first two weeks and the last week of July. The job description for this month is taken from the objectives of QA-TADD for Q6 which is integrating the purchased camera into the QA-TADD to take high resolution images.

Chapter 2

QA-TADD Development

In the last month (June 2014), we achieved the goal to enable QA-TADD work with high resolution images. To enable QA-TADD users work with real-time images, we purchased a decent DSLR camera (Canon EOS 700D Digital SLR Camera with 18MP CMOS sensor and 3 inch LCD) with the prime lens (Canon EF 50mm - f/1.4 USM Lens). A prime lens is a lens that has only one focal length. Prime lens can provide crisp and sharp shots. The effective distance in order to capture the container box (60 cm $\times$ 40 cm $\times$ 20 cm) fully is around 87 cm. In addition, we purchased a UV filter for the DSLR camera that absorbs the ultraviolet rays to make images under blueish or yellowish LED lights look more natural. Software implementation for this part of QA-TADD is to integrate DigiCamControl[1] in to it as shown in Figures 2.1 to 2.4.

[1] http://digicamcontrol.com/

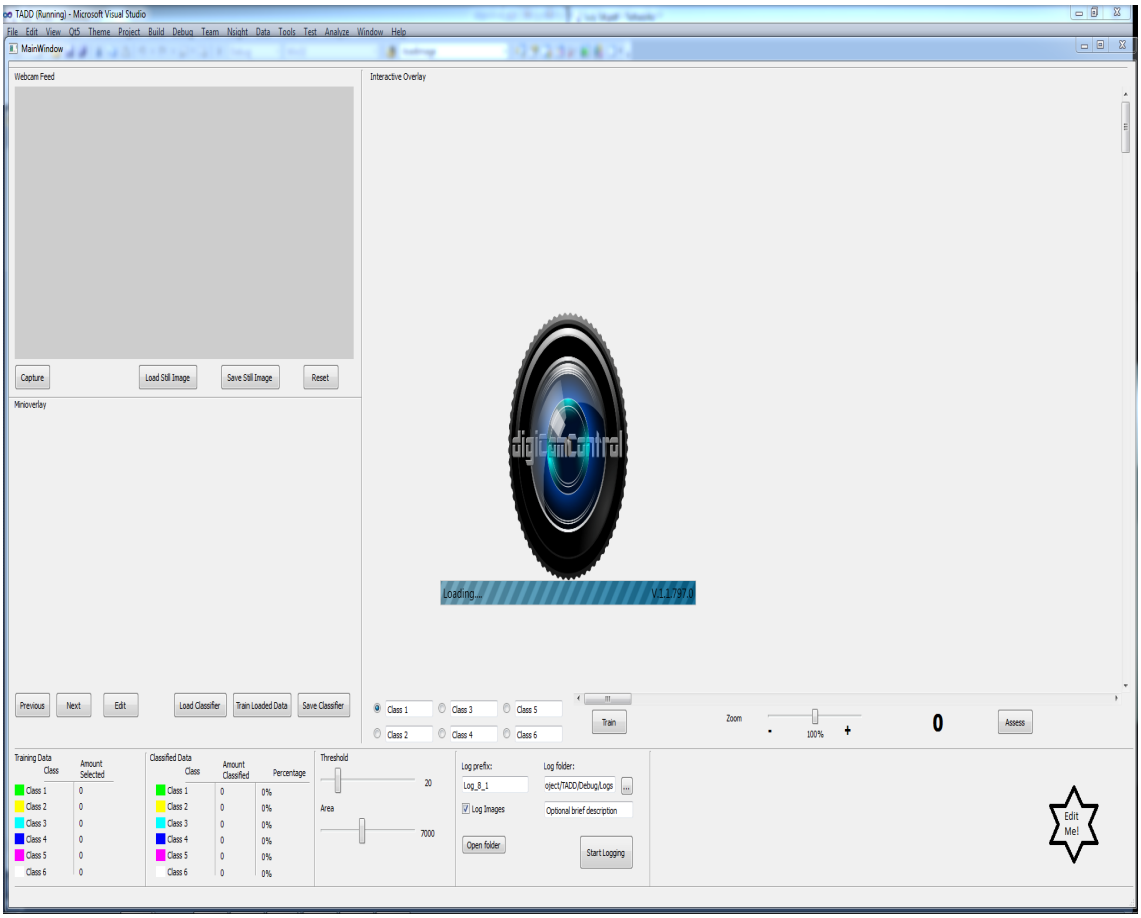

Figure 2.1: QA-TADD is running while it calls integrated DigiCamControl UI.

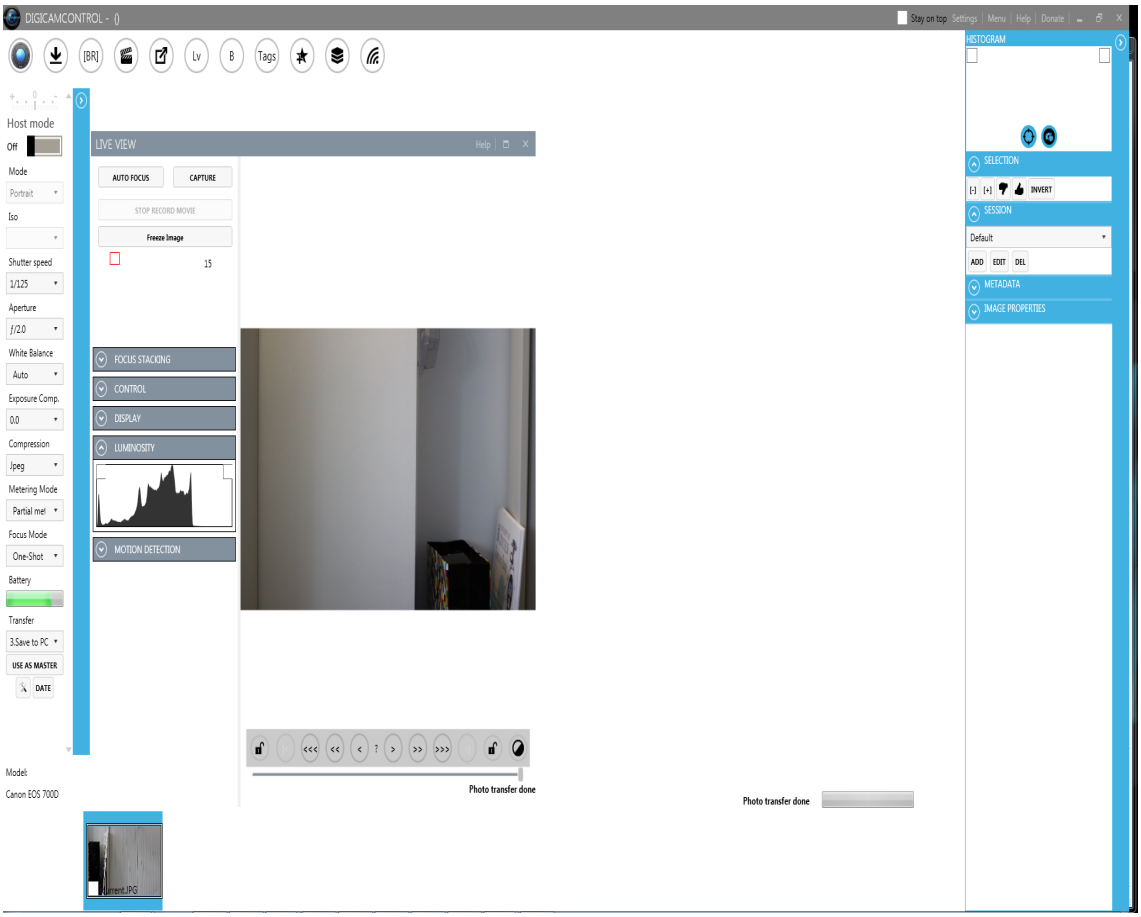

Figure 2.2: DigiCamControl UI is shown with functionalities like live view and capture. User can choose different parameters as well like shutter speed, aperture, auto-focus and white balance.

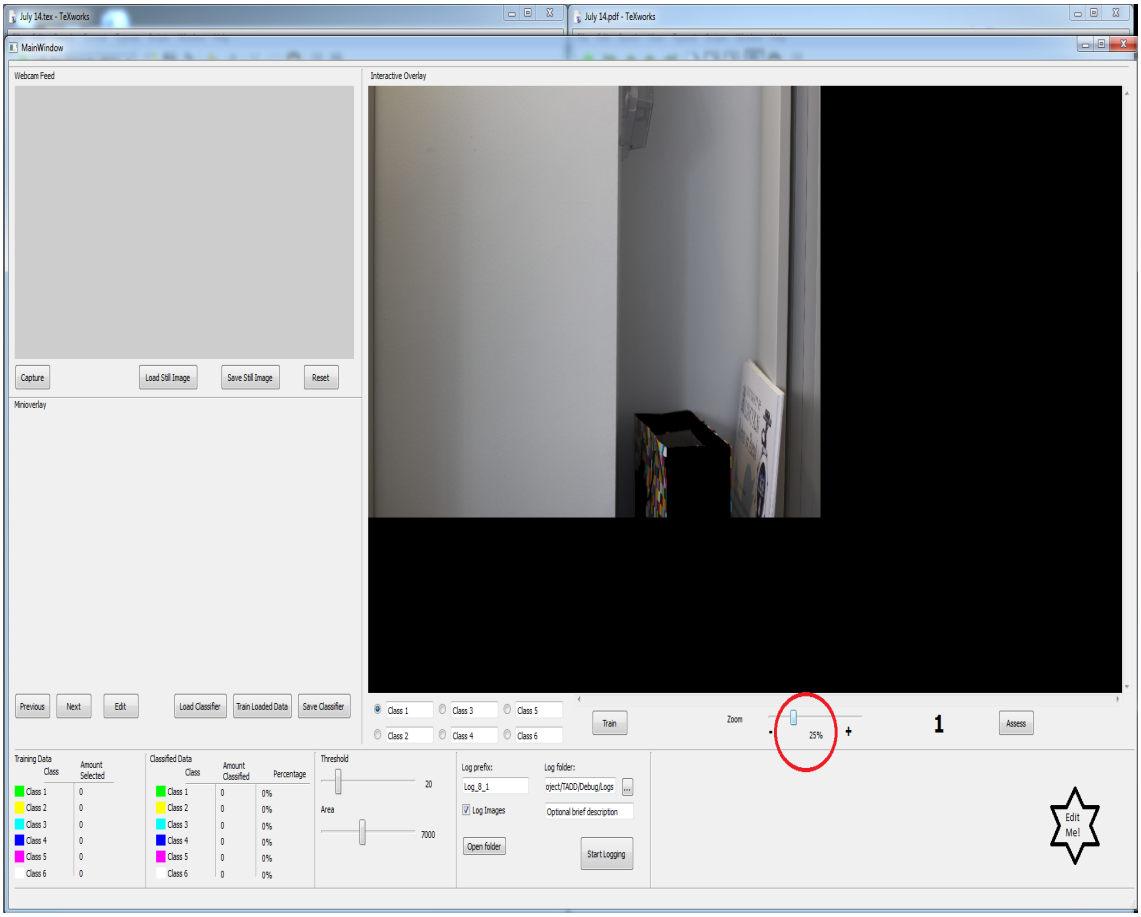

Figure 2.3: QA-TADD is then loaded with the captured photo with DSLR. Please note that the zoom is set to 25% for viewing purposes.

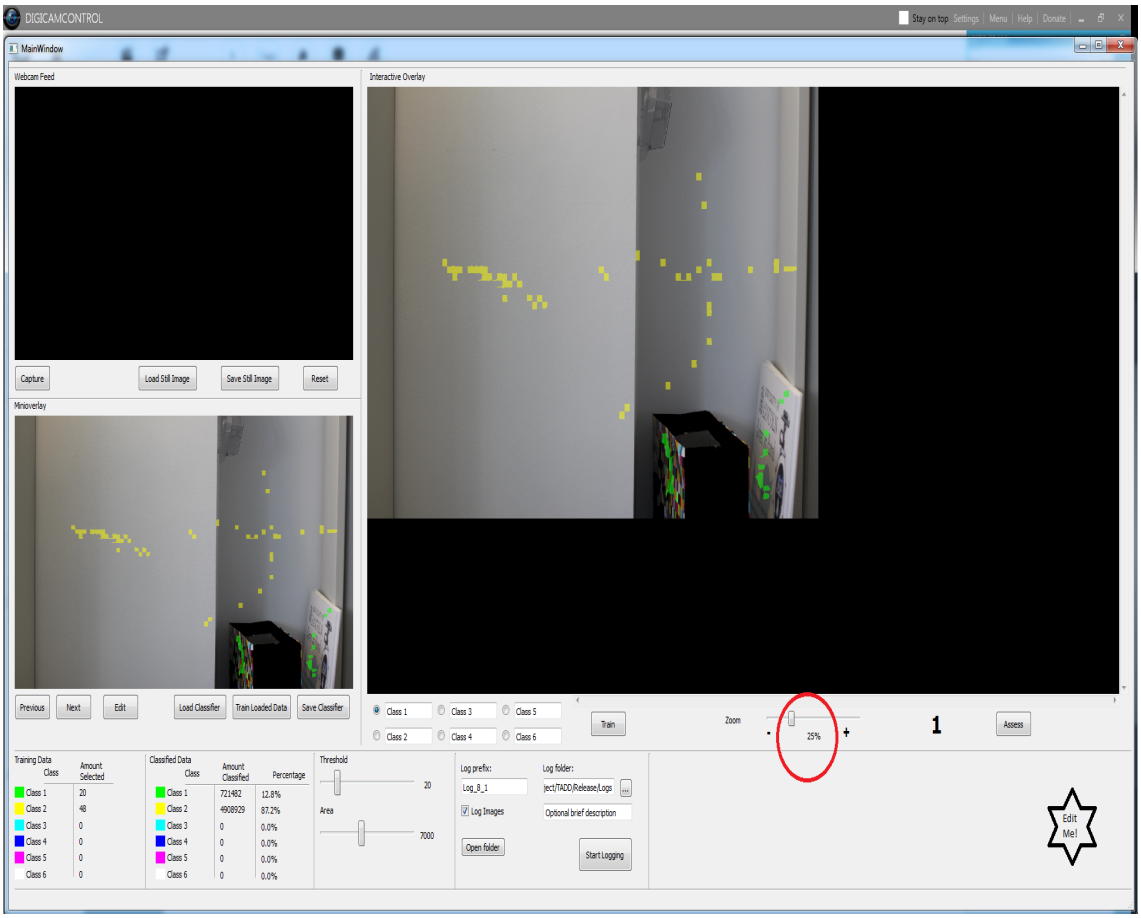

Figure 2.4: Training process is shown for the captured image.

Chapter 3

Conclusions

In this July 2014 report, we have enabled QA-TADD to work with the purchased DSLR camera. This gives the ability to the user to process QC tasks with more detailed images form potatoes.