12 February 2020

Re: Chair of Examiner's Report
PhD Candidate: Mr Gilbert Eaton (2795921)

A brief summary/overview of the examination reports.

I have read the examiners the reports and reviewed in in-thesis comments. I make the following summary comments.

Examiner 1 scored the thesis 2.2 seeking minor additional work. The revised work should be targeted as an improvement in the explanation of the experiments undertaken and how the results are presented. My conclusion is that no additional experimental work is required, but that some changes/additions to the thesis should be made to improve these explanations. These are outlined in more detail in comments about each chapter.

Examiner 2 scored the thesis 2.1 seeking minor revisions. In particular it is suggested that the title of the thesis should be changed. The comments on individual chapters are given together with suggestions and some extension questions.

Both examiners recommend the candidate make some minor changes, and following these changes, the degree be awarded.

A collation of the examination reports.

Both examiners agree that the candidate has made a significant and substantial contribution to the knowledge of the topic; that the standard of literary presentation is excellent; the methodology was good but perhaps could be better described in the thesis; the survey of literature is well done and generally the work is suitable for publication(s).

As both examiners commented on the chapters individually, I will do the same here in summary form. Some editorial and typographical notes have been included in the thesis by both examiners also.

Title: Examiner 2 argues for a change. I see no merit in the change and do not think it is necessary.

Chapter 1: Excellent introduction

Chapter 2: Good consideration of literature. Minor editorial comments and needs to add citation for some figures.

Chapter 3: Examiner 1 suggests a more directed argument about the image analysis (perhaps a table?), add a picture of the GUI? Add output images and make a clear outline of the final algorithm.

Chapter 4: Add more images to justify the conclusions; define "average pixel area".

Chapter 5: Examiner 1 seeks more detail in this chapter. A summary of the many images processed would be useful.

Chapter 6: A clearer outline of the image analysis processes in section 6.4 is sought.

Chapter 7: Generally good analysis. Very little change suggested in this chapter.

Chapter 8: Impressive results.

Chapter 9: “This chapter presents conclusions and outcomes and highlights the clearly met objectives and impressive performance of the final system.” (Examiner 1)

“Overall the thesis is well written and the author has done impressive work in design and development of strawberries punnets sorting system with a speed of 2 punnets/s suitable for industrial in-line integration. Major part of the work is devoted towards the designing of the system and controls development for making system suitable for grading fast-moving strawberry punnets.” (Examiner 2).

In-text comments: Both examiners included some comments in the thesis text. Most are minor. Those that are more important are also mentioned as points in their respective examiner’s reports.

Recommendation on the outcome of the examination:

The PhD degree should be awarded to the candidate subject to the following:

1) The candidate should respond to the comments in the examiner’s reports (particularly those in red type) with a decision to accept and change or to ignore. A detailed list of the comments and the candidate’s responses should be presented to the principal supervisor and, following their approval, to me for verification.
2) The in-thesis comments should be followed where appropriate. There is no requirement to provide a detailed list of these minor changes.
3) The candidate must ensure that all copied figures are properly referenced (with permission) in the figure captions.
4) The list of references should be edited to a uniform format.

I believe these changes should be made within 2 months of the receipt of this report.

In conclusion, this is an excellent piece of work covering machine learning and the practicalities of real-time implementation with control systems. The results are a proven commercial success. The examined thesis is unusually long and the changes/corrections should be brief and sharply focused so that the page length is not increased substantially.

Yours faithfully,

Chair of Examiners