

# AINT308 - Machine Vision and Behavioural Computing

## Coursework 1 Report

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**Abstract**—Machine Vision is field of study who's applications are becoming rapidly more prevalent amongst contemporary technology, with advancements having large implications in a wide variety of fields. This report details the use of a popular open-source machine vision library, OpenCV, in three different applications: Identifying the most common colour in an image, tracking a moving object within a video, and matching sub-components of an image to a larger image.

constraints given. This project also demonstrated the use of 3D printing in rapid prototyping applications, and the importance of correct material choice for the application.

*Keywords:*

Machine Vision, OpenCV, Object Tracking

### I. TASK 1 - COLOUR SORTER

- A. *Introduction*
- B. *Solution*
- C. *Limitations*
- D. *Further Improvements*
- E. *Conclusion*

### II. TASK 2 - OBJECT TRACKING

- A. *Introduction*
- B. *Solution*
- C. *Limitations*
- D. *Further Improvements*
- E. *Conclusion*

### III. TASK 3 - IMAGE MAPPING

- A. *Introduction*
- B. *Solution*
- C. *Limitations*
- D. *Further Improvements*
- E. *Conclusion*

### IV. CONCLUSION

Considering all factors, this project was a success. It showed that a entirely 'dumb' quadrupedal robot could be designed, assembled, and programmed with a gait capable of walking one metre in a reasonable amount of time. Design inspiration was taken from a combination of both fictional and contemporary sources, with project scope scaled to match the design

## APPENDIX