# DISSERTATION SUPERVISION LOGBOOK

| | |
|---|---|
| **Institute** | Institute of Engineering and Transport |
| **Programme** | Bachelor of Engineering (Honours) in Control and Electronics Engineering |
| **Dissertation Title** | **Tracking and Pose Estimation of a Robotic System using Computer Vision** |
| **Supervisor** | **Dr Ing. Jeremy Scerri** |
| **Student** | **Karl Spiteri** |
| **Student ID No** | **0294395M** |

**Note**

I. It is the **student's responsibility** to ensure that this logbook is correctly documented and maintained, and that Supervisor recommendations and signatures are acquired after each and every meeting.

II. This logbook is to be submitted together with the dissertation.

III. The institute reserves the right **to not accept** the student's dissertation for evaluation if this logbook is **not filled in correctly** and **duly signed** by the student and supervisor as indicated.

| Meeting Number : 1 | Date of meeting : 22/03/22 |
|---|---|

**Issues discussed at the meeting (*to be filled in by Student*)**

- First meeting talked about SOI & Dissertation Title.

- Discussed couple of AI related titles, then talked about what research to do for SOI.

- Also discussed how to fill in the SOI.

**Supervisor recommendations (*to be filled in by Supervisor*)**

- Suggested Dissertation Titles.

- Suggested Research for SOI.

- Guided on filling the SOI.

| Date of Next Meeting | Student Signature | Supervisor Signature |
|---|---|---|
| 21/10/22 | | |

MCAST

| Meeting Number : 2 | Date of meeting : 21/10/22 |
|---|---|

**Issues discussed at the meeting (*to be filled in by Student*)**

- Talked about how to tackle pose estimation.

- Discussed TensorFlow models.

- Discussed which robot to use.

**Supervisor recommendations (*to be filled in by Supervisor*)**

- Suggested to use kinematics using matrices from ArUco Markers.

- Suggested SSDs model building.

- Suggested use of either Omni Wheel Robot or Robotic Arm.

| Date of Next Meeting | Student Signature | Supervisor Signature |
|---|---|---|
| 28/10/22 | | |

| Meeting Number : 3 | Date of meeting : 28/10/22 |
|---|---|

**Issues discussed at the meeting (*to be filled in by Student*)**

- Discussed use of ArUco Markers for distance measurement.

- Discussed how to position markers and how many markers to use.

- Continued robot choice discussion, mentioned that robotic arm has more of a use case in the industry.

**Supervisor recommendations (*to be filled in by Supervisor*)**

- Agreed that ArUco Markers would be used for distance measurement.

- Suggested to encompass all joints with markers on each side.

- Agreed with use of the robotic arm.

| Date of Next Meeting | Student Signature | Supervisor Signature |
|---|---|---|
| 11/11/22 | | |

| Meeting Number : 4 | Date of meeting : 11/11/22 |
|---|---|

**Issues discussed at the meeting (*to be filled in by Student*)**

- Discussed about qualitative approach seemed appropriate.

**Supervisor recommendations (*to be filled in by Supervisor*)**

- Agreed.

| Date of Next Meeting | Student Signature | Supervisor Signature |
|---|---|---|
| 25/11/22 | | |

| Meeting Number : 5 | Date of meeting : 25/11/22 |
|---|---|

**Issues discussed at the meeting (*to be filled in by Student*)**

- About paper reference sourcing cause not always find what I need from IEEE.

**Supervisor recommendations (*to be filled in by Supervisor*)**

- Suggested to also use Google Scholar.

| Date of Next Meeting | Student Signature | Supervisor Signature |
|---|---|---|
| 02/12/22 | | |

**MCAST**

| Meeting Number : 6 | Date of meeting : 02/12/22 |
|---|---|

**Issues discussed at the meeting (*to be filled in by Student*)**

-   Discussed if tape marker or do a custom designed solution to place marker more accurately.

**Supervisor recommendations (*to be filled in by Supervisor*)**

-   Agreed on custom made holders.

| Date of Next Meeting | Student Signature | Supervisor Signature |
|---|---|---|
| 19/04/23 | | |

| Meeting Number : 7 | Date of meeting : 19/04/23 |
|---|---|

**Issues discussed at the meeting (*to be filled in by Student*)**

- Design tips for 3D design.

- Position of webcam feed.

**Supervisor recommendations (*to be filled in by Supervisor*)**

- Gave suggestions.

- Suggested view at eye level.

| Date of Next Meeting | Student Signature | Supervisor Signature |
|---|---|---|
| 21/04/23 | | |

| Meeting Number : 8 | Date of meeting : 21/04/23 |
|---|---|

**Issues discussed at the meeting (*to be filled in by Student*)**

- Asked for documentation of robotic arm.

- Showed progress of 3D design.

**Supervisor recommendations (*to be filled in by Supervisor*)**

- Mentioned available online.

- Good make small as possible to avoid collision.

| Date of Next Meeting | Student Signature | Supervisor Signature |
|---|---|---|
| 05/05/23 | | |

| Meeting Number : 9 | Date of meeting : 05/05/23 |
|---|---|

**Issues discussed at the meeting (*to be filled in by Student*)**

- Discussed use of offsetting markers to avoid occlusion as much as possible.

- Discussed making holders modular as possible in case of reprint to reduce time.

**Supervisor recommendations (*to be filled in by Supervisor*)**

- Agreed still need to consider some logic to avoid occlusion in code.

- Agreed also suggested use white for better marker detection results.

| Date of Next Meeting | Student Signature | Supervisor Signature |
|---|---|---|
| 26/05/23 | | |

| Meeting Number : 10 | Date of meeting : 26/05/23 |
|---|---|

**Issues discussed at the meeting (*to be filled in by Student*)**

- Discussed documentation where to place certain things did.

- Discussed the presentation of final output.

- Mentioned that scrap the idea of using pi due to limitations.

**Supervisor recommendations (*to be filled in by Supervisor*)**

- Guided

- Agreed.

- Agreed and guided how to mention it in the dissertation.

| Date of Next Meeting | Student Signature | Supervisor Signature |
|---|---|---|
| N/A | | |