



# **An Intelligent Robot for Monitoring and Protecting Toddlers**

## **Project Logbook**

**Project ID: 2023-326**

### **Student Details**

<b>Student Name</b>	<b>Student ID</b>
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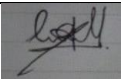
Supervised by  
Prof. Sanath Jayawardhne

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## **Declaration**

I declare that this is my own work, and this proposal does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any other university or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgment is made in the text.

Name	Student ID	Signature
Thuduhena R.S	IT20185466	

The above candidate has carried out research for the B.Sc. Dissertation under my supervision.

Signature of the Supervisor: \_\_\_\_\_ Date: \_\_\_\_\_

## February 2023

February - 2023	
Date No.	
week	Details of work done
week - 1	<ul style="list-style-type: none"> <li>° Finalize the overall research topic.</li> <li>° Identify individual research Component with the novelty.</li> </ul>
week - 2	<ul style="list-style-type: none"> <li>° Met the supervisor &amp; co-supervisor.</li> <li>° Plan and draft the overall system.</li> <li>° Finished writing the TAF document.</li> </ul>
week - 3	<ul style="list-style-type: none"> <li>° Identify devices required for building the individual Component.</li> <li>° First team meeting for planning things next document collaborate with team members.</li> </ul>
week - 4	<ul style="list-style-type: none"> <li>° Finalized the TAF document and submitted it to the CDAP.</li> </ul>
	<p><u>T.A. Jayarathna</u> (Signature of the Supervisor)</p>

Figure 1: Month of February

## March 2023

March - 2023	
week	Details of work done
Week - 1	<ul style="list-style-type: none"> <li>◦ Researching Keywords and Current work being Carried out on the area of interest.</li> <li>◦ Collaborating and EXPLORING with the team to further develop ideas.</li> </ul>
Week - 2	<ul style="list-style-type: none"> <li>◦ Started preparing for the proposal presentation.</li> <li>◦ preparing the project Charter document.</li> </ul>
Week - 3	<ul style="list-style-type: none"> <li>◦ presenting the project Charter via virtual meeting with the co-supervisor.</li> <li>◦ Submission of the project charter.</li> </ul>
Week - 4	<ul style="list-style-type: none"> <li>◦ Successfully Carried out the proposal presentation.</li> </ul>
	<p><u>Julia Jayarathne</u> (Signature of the Supervisor)</p>

Figure 2: Month of March



April 2023

April - 2023	
Date No.	
week	Details of work done
week 1	<ul style="list-style-type: none"><li>◦ purchasing devices and materials required for the navigation system.</li><li>◦ purchase Raspberry Pi 4 and Motor drivers, wheels, motors to build the system.</li></ul>
week 2	<ul style="list-style-type: none"><li>◦ started working on the python code for toddler following Part.</li><li>◦ Setup the toddler dataset</li></ul>
week 3	<ul style="list-style-type: none"><li>◦ Troubleshooting a frame 19 g issue.</li><li>◦ Learn about Machine learning and Model training on udemy course.</li></ul>
week 4	<ul style="list-style-type: none"><li>◦ build the robot navigation panel on acrylic sheet.</li></ul>
<div><div>The Jayarashmi</div><div>(Signature of the Supervisor)</div></div>	

Figure 3: Month of April

May 2023

May - 2023	
	Date No.
week	Details of work done
week 1	<ul style="list-style-type: none"><li>o Finished working on the proposal report and submitted it to the CDAP after review.</li><li>o meet with Supervisor to discuss the presentation.</li></ul>
week 2	<ul style="list-style-type: none"><li>o Collecting the data-set from COCO-model to train the model.</li><li>o working on the FPS dropping issue.</li></ul>
week 3	<ul style="list-style-type: none"><li>o Started working on all the Motor and driver Connecting to Raspberry Pi board.</li><li>o working on presentation slides for the progress presentation.</li></ul>
week 4	<ul style="list-style-type: none"><li>o Successfully Completed the first Progress review presentation.</li></ul>
	<p><u>Sri Jayawashie</u> (Signature of the Supervisor)</p>

Figure 4: Month of May



June 2023

June - 2023	
Date No.	
week	Details of work done
week 1	<ul style="list-style-type: none"><li>◦ Finished the toddler tracking after confirm its functionality.</li><li>◦ plan for the object avoidance navigation.</li></ul>
week 2	<ul style="list-style-type: none"><li>◦ Test the coding for all other sensor signal coming to PI used for navigation of Drivers.</li><li>◦ Writing status document - I</li></ul>
week 3	<ul style="list-style-type: none"><li>◦ Finalized the status document - I and submitted it to the CDAP.</li></ul>
week 4	<ul style="list-style-type: none"><li>◦ Worked on the Integrating the other parts with the navigation.</li></ul>
<div><div>— <u>Sri Jayashree</u> —</div><div>(Signature of the Supervisor)</div></div>	

Figure 5: Month of June



July 2023

July - 2023	
Week	Details of work done
Week 1	◦ Troubleshooting the issue of sharing the one pi board for all sort of function and mixing with navigation.
Week 2	◦ Researching about the make the novelty in the navigation part. ◦ develop the Accuracy of the dataset. Training using tools like Collab.
Week - 3	◦ programming the Esp32 Cam module to Toddler's flowing thing.
Week - 4	◦ Arrange the team meeting to discuss the problems while building the system.
T.D. Jayarathne (Signature of the Supervisor)	

Figure 6: Month of July

## August 2023

Aug - 2023 (August)		Date	No.
week	Details of work done		
week 1	o Testing the Toddler following capabilities in different setups.		
week 2	o Final testing of the following system in different scenarios.		
week 3	o worked on FPS dropping issue and reducing lag and latency of FPS.. o prepare the status document.		
week 4	o Met with other team members to prepare slides for the second progress presentation. o Submit the status document.		
		--- JLR Jayawade --- (Signature of the Supervisor)	

Figure 7: Month of August



## September 2023

Sep - 2023 (September) <span style="float: right;">Date _____ No. _____</span>	
week	Details of work done
week 1	<ul style="list-style-type: none"> <li>◦ Testing the obstacle-avoidance navigation with different setups.</li> <li>◦ Integrate with object tracking object-avoidance navigation.</li> </ul>
week 2	<ul style="list-style-type: none"> <li>◦ Assembling the all parts in prototype device enclosure to be present at (pp2).</li> <li>◦ participate in the (pp2) and successfully completed task.</li> </ul>
week 3	<ul style="list-style-type: none"> <li>◦ prepare research paper</li> <li>◦ preparing the final-individual report and Group Report to submit the draft Assembler.</li> <li>◦ completing the Thesis/draft report.</li> </ul>
week 4	<ul style="list-style-type: none"> <li>◦ Purchase and setup the robot covering and enclosure.</li> </ul>
<div style="text-align: right;"> <u>J.H. Jayawade</u>            (Signature of the Supervisor)         </div>	

Figure 8: Month of September

October 2023

OCT - 2023 (October)		Date	No.
week	Details of work done		
week 1	<ul style="list-style-type: none"><li>◦ preparing and design the poster for the Assessment.</li><li>◦ update the Git-Lab Environment</li></ul>		
week 2	<ul style="list-style-type: none"><li>◦ preparing the for final touch ups - in the robot.</li><li>◦ design the website for the task</li></ul>		
week 3	<ul style="list-style-type: none"><li>◦ Coding for building the website.</li><li>◦ preparing Final Progress report.</li></ul>		
week 4	<ul style="list-style-type: none"><li>◦ Meet the Supervisor to sign the logbook.</li><li>◦</li></ul>		
<div>Signature of the Supervisor</div> <p>Signature of the Supervisor</p>			

Figure 9: Month of October



## MS Planner Snapshot

An intelligent robot for monitoring and Protecting toddlers

☒ **Group Registration**

Assign

Add label

Bucket	Progress	Priority
Closing	<input checked="" type="checkbox"/> Completed	Important
Start date	Due date	Repeat
12/20/2022	12/26/2022	Does not repeat

Detailed description: This is a screenshot of a Microsoft Planner task card. At the top, it says 'An intelligent robot for monitoring and Protecting toddlers'. Below that is the task title 'Group Registration' with a green checkmark icon. There are two action buttons: 'Assign' and 'Add label'. The task is organized into a grid of six fields: 'Bucket' (Closing), 'Progress' (Completed with a green checkmark), 'Priority' (Important with a red exclamation mark), 'Start date' (12/20/2022), 'Due date' (12/26/2022), and 'Repeat' (Does not repeat). Each field has a dropdown arrow.

Figure 10: Group Registration

An intelligent robot for monitoring and Protecting toddlers

☒ **Topic evaluation**

Assign

Add label

Bucket	Progress	Priority
Initiating	<input checked="" type="checkbox"/> Completed	Important
Start date	Due date	Repeat
01/15/2023	01/20/2023	Does not repeat

Detailed description: This is a screenshot of a Microsoft Planner task card. At the top, it says 'An intelligent robot for monitoring and Protecting toddlers'. Below that is the task title 'Topic evaluation' with a green checkmark icon. There are two action buttons: 'Assign' and 'Add label'. The task is organized into a grid of six fields: 'Bucket' (Initiating), 'Progress' (Completed with a green checkmark), 'Priority' (Important with a red exclamation mark), 'Start date' (01/15/2023), 'Due date' (01/20/2023), and 'Repeat' (Does not repeat). Each field has a dropdown arrow.

Figure 11: Topic Evaluation

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An intelligent robot for monitoring and Protecting toddlers

✓

project Charter

Assign

Add label

<div>Bucket</div> <div>Closing</div> <div>▼</div>	<div>Progress</div> <div>✓ Completed</div> <div>▼</div>	<div>Priority</div> <div>! Important</div> <div>▼</div>
<div>Start date</div> <div>01/25/2023</div> <div>📅</div>	<div>Due date</div> <div>01/30/2023</div> <div>📅</div>	<div>Repeat</div> <div>🔄 Does not repeat</div> <div>▼</div>

Figure 12: Project Charter

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An intelligent robot for monitoring and Protecting toddlers

✓

Proposal Report

Assign

Add label

<div>Bucket</div> <div>Closing</div> <div>▼</div>	<div>Progress</div> <div>✓ Completed</div> <div>▼</div>	<div>Priority</div> <div>! Important</div> <div>▼</div>
<div>Start date</div> <div>03/15/2023</div> <div>📅</div>	<div>Due date</div> <div>03/24/2023</div> <div>📅</div>	<div>Repeat</div> <div>🔄 Does not repeat</div> <div>▼</div>

Figure 13: Proposal Report

...

✕

An intelligent robot for monitoring and Protecting toddlers

✓ **Status Document 1**

Assign

Add label

Bucket	Progress	Priority
Closing	✓ Completed	Medium
Start date	Due date	Repeat
Start anytime	05/22/2023	Does not repeat

Figure 14: Status Document -1

...

✕

An intelligent robot for monitoring and Protecting toddlers

✓ **Research Paper**

Assign

Add label

Bucket	Progress	Priority
Closing	✓ Completed	Medium
Start date	Due date	Repeat
05/28/2023	06/20/2023	Does not repeat

Figure 15: Research Paper

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An intelligent robot for monitoring and Protecting toddlers

✓ **Final Reports**

Assign

Add label

Bucket	Progress	Priority
Closing	Completed	Important
Start date	Due date	Repeat
08/05/2023	09/10/2023	Does not repeat

Figure 16: Final Report

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An intelligent robot for monitoring and Protecting toddlers

○ **Research Paper and registration notification**

Assign

Add label

Bucket	Progress	Priority
Planning	In progress	Important
Start date	Due date	Repeat
09/30/2023	11/06/2023	Does not repeat

Figure 17: Research Paper and Registration Notification



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✕

An intelligent robot for monitoring and Protecting toddlers

✓ Final Presentation and VIVA

Assign

Add label

Bucket

Planning

▼

Progress

In progress

▼

Priority

Urgent

▼

Start date

10/20/2023

📅

Due date

11/01/2023

📅

Repeat

Does not repeat

▼

Figure 18: Final Presentation and Viva

<div> <div>AP</div> <div>An intelligent robot for m...</div> <div>Grid Board Charts Schedule</div> </div> <div> <div>MI</div> <div>Madddepola M.A.D.K.B. it20136260</div> <div>Members</div> <div>Filter (0)</div> </div>						
Title	Assignment	Start Date	Due Date	Bucket	Progress	Priority
<div>○</div> <div>Final Presentation and VIVA</div> <div>①</div>		10/20/2023	11/1/2023	Planning	In progress	Urgent
<div>○</div> <div>Research Paper and registration notification</div>		9/30/2023	11/6/2023	Planning	In progress	Important
<div>✓</div> <div>Final Reports</div>		8/5/2023	9/10/2023	Closing	Completed	Important
<div>✓</div> <div>Research Paper</div>		5/28/2023	6/20/2023	Closing	Completed	Medium
<div>✓</div> <div>Status Document</div>			5/22/2023	Closing	Completed	Medium
<div>✓</div> <div>Proposal Report</div>		3/15/2023	3/24/2023	Closing	Completed	Important
<div>✓</div> <div>project Charter</div>		1/25/2023	1/30/2023	Closing	Completed	Important
<div>✓</div> <div>Topic evaluation</div>		1/15/2023	1/20/2023	Closing	Completed	Important
<div>✓</div> <div>Group Registration</div>		12/20/2022	12/26/2022	Closing	Completed	Important

Figure 19: Summary of MS Planner