

Project Development and Completion Tracker

Project ID:	TYAIA212	Class	TY-AI 2	Percentage of Project Completion:	98%	Copyright Status:	NA	Technology Transfer:	NO	https://docs.google.com/document/d/1mmC
Project Domain	Machine Learning & AI	Specialization	AI	Map Sustainable Development Goal:	11 Sustainable Cities and Communities	Paper Publication Status:	Submitted	Achievements:	Type Your Answer_ 1. 2.	
Problem Statement	Urban traffic congestion is often worsened by outdated traffic light systems that fail to adapt to real-time conditions, leading to inefficiencies, increased travel times, and driver frustration.			GitHub Link:	https://github.com/Frostwalker3107/ITSS.git			Meeting Count	12	
Project Development Student Team Members	Enrollment Number	Name of Students	Class	Contact Number	Email ID	Review-1 Marks	Review-2 Marks	Review-3 Marks	Final Evaluation Marks (50)	Total Marks (100)
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Project Guide Industry Mentor	Prof. Vaibhav Sawalkar									
Review Date	Comment by Jury/ Mentor	Review Link		Technology Stack	1	2	3	4	5	
Review-1	2/28/2025			Front-end (Client-side)						
Review-2	4/23/2025			Back-end (Server-side):						
Review-3	5/16/2025			Database Layer:						
				Development Tools:						
				Deployment and Infrastructure:						
				Specialization Inlinement:						
Epic:	As a Citizen, I should not have to wait for long time at the traffic signal.									
Story 1:	As a citizen, I want the traffic to get cleared as soon as possible.									
Story 2:	As a citizen, I don't want to wait at the traffic signal for a long time even if there are no vehicles on the other ways of the signals.									
Story 3:	As a citizen, I need the traffic signal to turn green immediately for an approaching emergency vehicle.									
Task1:	Train a ML model to detect vehicles like buses, motorcycles, cars, trucks, rickshaws.									
Task2:	Once vehicles are detected waiting at the traffic signal, start counting the number of vehicles at each side of signal.									
Task3:	Based on more number of vehicles, create a logic to give way to more densed way.									
Task4:	Once the whole software works properly, Go for the hardware implementation.									
Task5:	Check on real-time traffic.									
Task6:	Deploy the system for real intersections for improve the traffic flow.									
Acceptance Criteria										
1	The system must detect and count different vehicle types with ≥85% accuracy and update counts after every red signal cycle.									
2	Emergency vehicles must be detected within 2 seconds, turning their lane's signal green immediately while others turn red, with ≥90% accuracy.									
3	Signals must dynamically allocate 5–60 seconds of green time per lane based on traffic density, with smooth transitions and real-time re-evaluation.									
4	The system must log vehicle counts, emergency events, and signal timings in a database with real-time accessibility and traffic reports.									

Sprint No.	Task Name	Sub Tasks	Task Status	Assigned To	Assigned Date	Deadline	Start Date	Completion Date	Completion Status
Sprint 1 25-02-2025	Train ML model to detect vehicles	Research and download dataset	Complete	Ishan, Omkar	2025-02-25	2025-03-15	2025-03-03	2025-03-11	100%
		Train the model	Complete	Ishan, Omkar	2025-02-25	2025-03-15	2025-03-03	2025-03-11	100%
Sprint 2 21-03-2025	Count number of vehicles using camera	Detect vehicles using camera	Complete	Arnav, Samiksha	2025-03-16	2025-04-03	2025-03-17	2025-03-21	100%
		Improve accuracy if needed	Complete	Arnav, Omkar	2025-03-16	2025-04-03	2025-03-17	2025-03-21	100%
Sprint 2 01-04-2025	Improve Accuracy	Train the model for every type of vehicle	Complete	Ishan, Samiksha	2025-04-02	2025-04-15	2025-04-03	2025-04-26	100%
		Different environmental testing	Complete	Omkar, Samiksha	2025-04-20	2025-04-30	2025-04-22	2025-04-29	100%
Sprint 2 29-04-2025	Apply logic for traffic light switching	Implement code for the logic	Complete	Arnav, Ishan	2025-05-02	2025-05-08	2025-05-04	2025-05-11	100%
		Vizual representation on simulation software	Overdue	Arnav, Samiksha	2025-05-07	2025-05-14	2025-05-07		80%

Publication Details										
Sr. No.	Paper Title	Name of Journal	Year	Authors	URL	DOI	Volume	Page no.	Publisher	
1	Smart Traffic Light Control System	International Journal of Scientific Research	2024	Arnav Sohani, Ishan Gaikwad	https://ijssrem.com/volume08issue11/1055047/USREM39220		8	11	IJSREM	
2										

Patent Details										
Sr. No.	Title	Inventors	Application No.	Patent Number	Filing Country	Subject Category	Filing Date	Publication Date	Publication Status	
1										

Copyright Details										
Sr. No.	Title of work	Name of Applicants	Registration No.	Dairy Number	Date	Status				
1										

Event and Participations Details										
Sr. No.	Name of Event	Type of Event	Date	Type of Participation	Details of Prize won					
1										
2										

Add Weekly Meetings Details [Minimum 12 meetings]										
Date	Attendees with commas	Agenda points with commas	Action Items	Assigned to	Status (click if completed)					
04-02-2025	Everyone	Discussion about the idea of project and implementation	Research about many more ideas	Whole group	<input checked="" type="checkbox"/>					
2/12/2025	Everyone	Discussion about improving the method	Decided to train our model	Whole group	<input checked="" type="checkbox"/>					
02/18/2025	Everyone	Choosing model for detecting vehicles	also used yolov8 to improve accuracy	Whole group	<input checked="" type="checkbox"/>					
3/4/2025	Everyone	Discussion on improving the model	created own dataset to improve accuracy	Whole group	<input checked="" type="checkbox"/>					
3/11/2025	Everyone	Improving Accuracy	Trained one more model	Whole group	<input checked="" type="checkbox"/>					
3/18/2025	Everyone	Creating visual representation	Checked for logical softwares	Whole group	<input checked="" type="checkbox"/>					
3/25/2025	Everyone	Visual Representation designing	Used AnyLogic Software to create representation	Whole group	<input checked="" type="checkbox"/>					
4/1/2025	Everyone	Building logic for traffic signal	Checked for what will be efficient	Whole group	<input checked="" type="checkbox"/>					
4/8/2025	Everyone	Trying different conditions	Checked for different videos	Whole group	<input checked="" type="checkbox"/>					
4/22/2025	Everyone	Emergency Vehicle detection	Trained model for Emergency vehicles	Whole group	<input checked="" type="checkbox"/>					
4/29/2025	Everyone	Reports and paper publishing	Completed as per the discussion	Whole group	<input checked="" type="checkbox"/>					
5/13/2025	Everyone	Final check of documents	All documents were kept cleared	Whole group	<input checked="" type="checkbox"/>					