

# MINIPROJECT LOGBOOK

**(CSM501: Mini Project 2 A)**

## GROUP MEMBERS

1. Simran Ahuja (02)
2. Jesica Bijju (10)
3. Sejal Datir (14)
4. Sania Khan (36)

Mentor

Dr. Mrs. Nupur Giri



**Department of Computer Engineering**

**Vivekanand Education Society's Institute of Technology,**

**An Autonomous Institute affiliated to University of Mumbai**

**HAMC, Collector's Colony, Chembur,**

**Mumbai-400074**

**University of Mumbai (AY 2023-24)**

## **INSTITUTE VISION & MISSION**

### **VISION:**

To create a vibrant knowledge oriented environment with innovative teaching practices and to inculcate a tradition of socially conscious application of technology.

### **MISSION:**

- To inculcate a culture of value based education.
- To enthuse students to develop in an ambient environment of caring and of sharing information.
- To enable students to work towards excellence in their chosen field with a professional bent of mind.

## **COMPUTER ENGINEERING DEPARTMENT**

### **VISION:**

To reach international standards by empowering students with Computing skills and cutting edge technology

### **MISSION:**

- To sustain excellence in teaching and research and create center of excellence
- To provide broad Educational and Research experiences through interdisciplinary and industrial collaboration programs.
- To prepare students to enter the world of computing and make them ready for productive employment in the public or private sectors, enhance their entrepreneurship skills and motivate them to pursue advanced degrees.

## PROGRAM EDUCATIONAL OBJECTIVES (PEO's)

I	To provide students with a solid foundation in their core concepts of mathematical, scientific and computer engineering fundamentals required to comprehend, analyze and design solutions for real life problems.
II	To inculcate in students, a balanced outlook with professional and ethical attitude, develop effective communication skills, teamwork and leadership qualities with multidisciplinary approach.
III	To prepare students to excel in postgraduate programs through an excellent academic environment and make them ready for productive employment in the public or private sectors and provide lifelong learning experience.
IV	To provide broad educational and research experience through interdisciplinary and industry centric programs.

## PROGRAM OUTCOMES (POs)

<b>Program Outcome Code</b>	<b>Program Outcome Description</b>
PO1	Basic Engineering knowledge: An ability to apply the fundamental knowledge in mathematics, science and engineering to solve problems in Computer engineering.
PO2	Problem Analysis: Identify, formulate, research literature and analyze computer engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and computer engineering and sciences
PO3	Design/ Development of Solutions: Design solutions for complex computer engineering problems and design system components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal and environmental considerations.

PO4	Conduct investigations of complex engineering problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of information to provide valid conclusions.
PO5	Modern Tool Usage: Create, select and apply appropriate techniques, resources and modern computer engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO6	The Engineer and Society: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to computer engineering practice.
PO7	Environment and Sustainability: Understand the impact of professional computer engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of computer engineering practice.
PO9	Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings.
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations and give and receive clear instructions.
PO11	Project Management and Finance: Demonstrate knowledge and understanding of computer engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	Life-long Learning: Recognize the need for and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.

## PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1	<b>Professional Skills</b> - The ability to develop programs for computer based systems of varying complexity and domains using standard practices.
PSO2	<b>Successful Career</b> - The ability to adopt skills, languages, environment and platforms for creating innovative career paths, being successful entrepreneurs or for pursuing higher studies.

## STUDENT INFORMATION

### Project Title: Behavioral Analysis and Risk Assessment of Two-Wheeler Drivers

	Student 1	Student 2	Student 3	Student 4
<b>Roll No.</b>	02	10	14	36
<b>Name</b>	Simran Ahuja	Jesica Bijju	Sejal Datir	Sania Khan
<b>Class with Division</b>	D12C	D12C	D12C	D12C
<b>Contact No.</b>	9326640113	8097065465	8169123010	9619004776
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<b>Address</b>	B-1402, Willows twin towers, Swapna Nagri, Mulund west-400080	Flat no. B-11/2-1, Shiva Palm Beach CHS, Sect-4, Nerul	509/Bldg. 7 , Highland Park, Near D Mart, Dhokali, Kolshet Road, Thane(W)	B-102, Sunplaza, Plot-149, Sector-21, Nerul, Navi Mumbai

## **INSTRUCTIONS TO STUDENTS:**

1. The logbook must be submitted to the mentor or Co-Mentor for verification and evaluation of project activities at least once in a week.
2. Logbook duly signed by the guide must be submitted with a project report for evaluation at the end of semester to the department.

## **DECLARATION**

I declare that this project represents my ideas in my own words and wherever others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my project work. I promise to maintain minimum 75% attendance, as per the University of Mumbai norms. I understand that any violation of the above will be cause for disciplinary action by the Institute.

Yours Faithfully

1. Simran Ahuja (02)
2. Jesica Bijju (10)
3. Sejal Datir (14)
4. Sania Khan (36)

(Signature of Students)

## Letter of Acceptance

I undersigned, **Prof. Dr. Mrs. Nupur Giri** working in the Computer Engineering department, willing to guide the project titled ***Behavioral Analysis and Risk Assessment of Two-Wheeler Drivers*** for the Mini Project 2 A Semester V respectively for the ***Academic Year 2023-24***. The names of the students are:

1. **Simran Ahuja (02)**
2. **Jesica Bijju (10)**
3. **Sejal Datir (14)**
4. **Sania Khan (36)**

(Project Guide)

(Mini Project Coordinator)

(HOD Computer)

## COURSE OUTCOMES

CO No.	COURSE OUTCOME	POs covered	PSOs covered
CO1	Identify problems based on societal /research needs.	PO1, PO2,PO4	PSO1,PSO2
CO2	Apply Knowledge and skill to solve societal problems in a group.	PO1,PO2,PO4, PO5,PO6,PO8	PSO1,PSO2
CO3	Develop interpersonal skills to work as a member of a group or leader.	PO1,PO2,PO4, PO9,PO11	PSO1,POS2
CO4	Draw the proper inferences from available results through theoretical/ experimental/simulations.	PO1,PO2,PO4, PO5,PO6,PO12	PSO1,POS2
CO5	Analyze the impact of solutions in societal and environmental context for sustainable development.	PO2,PO3,PO4, PO7,PO12	PSO1,POS2
CO6	Use standard norms of engineering practices	PO1,PO2,PO4, PO12	PSO1
CO7	Excel in written and oral communication.	PO1,PO4,PO8, PO9,PO10,PO12	PSO1
CO8	Demonstrate capabilities of self-learning in a group, which leads to lifelong learning.	PO1,PO2,PO4, PO12	PSO1
CO9	Demonstrate project management principles during project work.	PO1,PO2,PO4, PO11,PO12	PSO1,POS2

## CO-PO-PSO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	1	2	-	2	-	-	-	-	-	-	-	-	1	1
CO2	2	2	-	2	3	2	-	2	-	-	-	-	2	1
CO3	1	1	-	2	-	-	-	-	3	3	-	-	1	1
CO4	2	1	-	1	2	2	-	-	-	-	-	2	2	1
CO5	-	2	1	2	-	-	3	-	-	-	-	1	1	2
CO6	1	2	-	1	-	-	-	-	-	-	-	2	2	-
CO7	1	-	-	1	-	-	-	3	2	2	-	1	1	-
CO8	1	3	-	3	-	-	-	-	-	-	-	2	1	-
CO9	1	1	-	2	-	-	-	-	-	-	2	2	1	2



## SCHEDULE FOR MINI PROJECT

Date	Week	Contents	Remark	Guide Sign
28/7/23	1	Initial project discussion focused on understanding our work and its integration with other teams.		
9/8/23	2	Discussion about the project synopsis and research papers.		
17/8/23	3	Discussion about the LSTM Base Paper and collecting data using SensorLog App		
22/8/23	4	Discussion about data collected and future collection strategies for a given route and basic LSTM code		
12/9/23	5	Discussion on data collected for a given week and labeling the data and writing code for Residual LSTM		
22/9/23	6	Discussion on finding correlation between some parameters that will be finally needed for model		
25/9/23	7	Correlation equations of ranges of parameters, LSTM model		
30/9/23	8	Discussion on writing equations for the parameters and finalizing parameters needed for sensor list.		
3/10/23	9	Read base papers properly, implement single-output, multi-output regression residuals		
3/10/23	10	Demarcating a clear idea for residual algorithm to be implemented for ML model.		
9/10/23	11	Further discussion on training different models for comparison		

## PROGRESS/ATTENDANCE REPORT

Title of the Project: <b>Behavioral Analysis and Risk Assessment of Two-Wheeler Drivers</b>	
Group No. 1	<p style="text-align: center;"><b>Name of the Student 1 - Simran Ahuja</b></p> <p style="text-align: center;"><b>Name of the Student 2 - Jesica Bijju</b></p> <p style="text-align: center;"><b>Name of the Student 3 - Sejal Datir</b></p> <p style="text-align: center;"><b>Name of the Student 4 - Sania Khan</b></p>
Name of the Supervisor: Dr. Mrs. Nupur Giri	

Sr. No	Date	Attendance				Progress/Suggestion	Mapping		
		1	2	3	4		CO	PO	PSO
1	28/7	✓	✓	✓	✓	Explore different research papers	CO1	PO1, PO2,PO4	PSO1,PSO2
2	9/8	✓	✓	✓	✓	Narrowed done on a base paper	CO1	PO1, PO2,PO4	PSO1,PSO2
3	17/8	✓	✓	✓	✓	Began data collection through the SensorLog App	CO2	PO1,PO2,P O4, PO5,PO6,P O8	PSO1,PSO2
4	22/8	✓	✓	✓	✓	Began data collection for a week for Bhakti Bhavan group.	CO2	PO1,PO2,P O4, PO5,PO6,P O8	PSO1,PSO2
5	12/9	✓	✓	✓	✓	Start looking on making threshold dynamic and writing code for residual LSTM	CO4	PO1,PO2,P O4, PO5,PO6,P O12	PSO1,POS2
6	22/9	✓	✓	✓	✓	Pruned the unnecessary parameters,	CO6	PO1,PO2,P O4, PO12	PSO1

7	25/9	✓	✓	✓	✓	Fine Tune the LSTM Model and find equations with ranges of parameter	CO6	PO1,PO2,P O4, PO12	PSO1
8	30/9	✓	✓	✓	✓	Came up with equations for the 6 risky behaviors	CO6	PO1,PO2,P O4, PO12	PSO1
9	3/10	✓	✓	✓	✓	Increase understanding of base paper	CO4	PO1,PO2,P O4, PO5,PO6,P O12	PSO1,POS2
10	3/10	✓	✓	✓	✓	Collected labeled data on a given route and plotted it on a map	CO6	PO1,PO2,P O4, PO12	PSO1
11	9/10	✓	✓	✓	✓	Used Random Forest, XGBoost, CNN to train the model for comparison	CO6	PO1,PO2,P O4, PO12	PSO1

Sign of the Supervisor

## EXAMINER'S FEEDBACK FORM

Name of External examiner: \_\_\_\_\_

College of External examiner: \_\_\_\_\_

Name of Internal examiner: \_\_\_\_\_

Date of Examination: \_\_\_\_/\_\_\_\_/\_\_\_\_

No. of students in project team: \_\_\_\_\_

Availability of separate lab for the project: Yes / No

### Student Performance Analysis (Put Tick as per your Observation)

Excellent (3)		Very Good (2)		Good (1)	
Sr. No.	Observation	(3)	(2)	(1)	
1	Quality of problem and Clarity				
2	Innovativeness in solutions				
3	Cost effectiveness and Societal impact				
4	Full functioning of working model as per stated requirements				
5	Effective use of skill sets				
6	Effective use of standard engineering norms				
7	Contribution of an individual's as member or leader				
8	Clarity in written and oral communication				
9	Overall performance				

- o Can the same mini project extend to next semester by adding new objectives/ideas? ( Yes/ No)
- o If yes, suggest new Innovative Technique/Idea/ objectives related to this project.

**Signature of External Examiner**

**Signature of Internal Examiner**