



# SIT374/SIT764

Team Project (A)



Learning Summary Report

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## Self-Assessment Details

The following checklists provide an overview of my self-assessment for this unit.

	Pass (P)	Credit (C)	Distinction (D)	High Distinction (HD)
Self-Assessment				✓

Self-Assessment Statement

## Declaration

I declare that this portfolio presents my individual contributions to the outcomes achieved by my Squad as well as my personal submissions. I have not copied from any other student's work or from any other source except where due acknowledgment is made explicitly in the text, nor has any part of this submission been written for me by another person.

Signature: **Rahul Kumar**

## Part 1: Reflection on completed project work

This unit was an empowering unit & played a pivotal role in strengthening my communication, team building, leadership, problem solving & python scripting skills which helped me understand & solve real-world problems by delivering project outcomes in a given time constraint efficiently. At the commencement of Trimester 3, 2021, we took **4 unique & crucial projects (Tree Problem, Wi-Fi/Pedestrian Problem & Fire Problem)** specifically for 'Geelong City' to make it internationally recognised as a 'clever and creative city-region that is forward looking, enterprising and adaptive, and cares for its people. This portfolio includes work that demonstrates that I have achieved all assessment criteria for SIT374/SIT764 to a **Higher Distinction (HD)** level. Each of the assessment criteria is expanded in the following table:

	Criteria	Grade claimed	Supporting arguments	Supporting evidence (refer to appendix if needed)
Basic	Professional Behaviour	D	Throughout this Trimester I conducted myself in a professional, ethical & respectful manner with my colleagues which has been exceptional & delivered my astute capability by adapting pragmatic approach in delivering verifiable results at the end.	Made good judgements when required and was very productive. I also supported & motivated team members by assisting them with any project deliverables which helped me & my team achieve great results throughout the unit.
		D	I've maintained integrity, shared my ideas and contributed my skills & knowledge through professional communication throughout the unit for every project deliverable to my teammates to ensure the veracity of the task under senior supervision by following proper etiquettes as required through project scoping and its outcomes warrants a Distinction.	Recorded Internal Scrum Meetings, Studio Sessions & Chats with seniors and juniors. These evidences showed my professionalism throughout the unit. This can all be referenced from Iteration-0 & Iteration-1 individual Retrospective. <b>All the Evidences including updated Iteration-2 can also be acquired through this Hyperlink: '<a href="#">Evidence</a>'</b>
	Accountability (Worklogs)	D	Throughout the Trimester, I have demonstrated a <b>total of 144 hours of quality work</b> & 36.5 hours in last iteration (from 5 <sup>th</sup> December, 2021 till 19 <sup>th</sup> December, 2021). The overall worklog includes Up-skilling, Scheduled lectures, Research, Squad meetings, Studio Sessions, Expert Panel Demo, Internal Scrum Meetings, Contribution, Mentoring, Code Debugging & Task completion. Throughout the period of 6 weeks, my Accountability was constantly at or above Distinction level.	During these hours, I've maintained professional communication & integrity, actively participated in every project deliverables assigned & delivered captivating results as per required. The respective hours were dedicated to tasks mentioned in <a href="#">Trello</a> & <a href="#">Bitbucket</a> which can be referenced from Iteration-0 & Iteration-1 individual Retrospective. <b>All the Evidences including updated Iteration-2 can also be acquired through this Hyperlink: '<a href="#">Evidence</a>'</b>
	Attendance	D	As indicated by the worklog, I've actively attended 90% of the scheduled lectures & all the Squad meetings, Client meetings, Internal Scrum meetings & Studio sessions while contributing my updates, ideas & results with our teammates parallelly which made our project more efficient. Always	Recorded Internal scrum meetings, studio sessions, client meeting & scheduled lectures. Actively participated in all Studio sessions and presented the 'Pedestrian & Wi-Fi' slides to panellists, client & mentor with clear explanation. This

			arrived on time and was prepared by reviewing the agenda or meeting notes given by seniors beforehand. I also showed professionalism throughout the unit & results that were enthralling to the teammates & audience which warrants my Attendance at or above Distinction level.	can all be referenced from Iteration-0 & Iteration-1 individual Retrospective. <b>All the Evidences including updated Iteration-2 can also be acquired through this Hyperlink: '<a href="#">Evidence</a>'</b>
	Engagement	D	Throughout the Trimester, I have been actively involved in every team activity across all aspects of the project. Demonstrated commitment to the project by sharing ideas, resources required for the project deliverables, getting timely updates from teammates, also motivated them throughout the unit with an optimistic attitude.	I also contributed in planning a professional project handover for future iterations & team to help the client and juniors identify project deliverables effortlessly. This can all be referenced from Iteration-0 & Iteration-1 individual Retrospective. <b>All the Evidences including updated Iteration-2 can also be acquired through this Hyperlink: '<a href="#">Evidence</a>'</b>
Core	Communication	D	Throughout the Trimester, I have demonstrated professional communication while engaging with my seniors & teammates during Squad meetings, Internal Scrum Sessions, Studio Sessions & Client meetings. I spoke clearly and courteously in every meeting so that seniors, teammates, client & panellists can easily comprehend my language and meaning behind the project work which expressed my outstanding groundwork in this area.	I took notice of my colleagues with attention & acknowledged their shared ideas & work which helped me a lot throughout the unit. I even responded to every project related queries in a timely manner. This can all be referenced from Iteration-0 & Iteration-1 individual Retrospective. <b>All the Evidences including updated Iteration-2 can also be acquired through this Hyperlink: '<a href="#">Evidence</a>'</b>
	Teamwork	D	Throughout the Trimester, I have showed great interpersonal skills with my seniors & teammates which boosted our work exponentially and helped us achieve project deliverables in time. My engagement & commitment to the team showcased a Distinction standard overall.	I also gave & received feedbacks of our overall work from teammates which was great for future references. As a team, we completed 4 crucial real-world projects through diligent & subtle approach that was appreciated by panellists & clients at the end with great feedbacks. This can all be referenced from Iteration-0 & Iteration-1 individual Retrospective. <b>All the Evidences including updated Iteration-2 can also be acquired through this Hyperlink: '<a href="#">Evidence</a>'</b>
	Process	D	I've been assiduous & consistent throughout the iteration & followed the team's hierarchy, structure & working process for maintaining professionalism throughout the unit. Also, delivered results in timely fashion under senior supervision. Simultaneously helped my teammates with their queries regarding project deliverables on time.	My commitment to the processes is shown by my broad and convenient utilization of our support systems (work log, <a href="#">Trello</a> & <a href="#">Bitbucket</a> ). This can all be referenced from Iteration-0 & Iteration-1 individual Retrospective. <b>All the Evidences including updated Iteration-2 can also be acquired through this Hyperlink: '<a href="#">Evidence</a>'</b>
	Product	D	In light of Product in this Trimester, I have been allocated to 'Pedestrian & Wi-Fi' Problem where I developed all the new Machine learning models from scratch &	As for Pedestrian & Wi-Fi Problem, I have included new features like 'Google Maps API integration, Reverse Geocoding, Lockdown

			included various new methodologies utilizing GCP & Tableau. I've also been actively involved in all the major activities which helped us to accomplish multiple project deliverables in a given timeframe (as agreed in the team's project scope).	stages, Geo-spatial & normal clustering, SMOTE & RandomUnderSampler, Boosting (XGBoost) & other supervised Machine learning models (Decision Tree, KNN & SVM), Neural Network (LSTM). This can all be referenced from our ' <a href="#">Trello Board</a> '.
		D	I have likewise rolled out significant improvements to the overall project and upgraded the productivity of the results with verifiable results under senior supervision prior to committing it on Bitbucket.	These evidences can also be referenced from our ' <a href="#">Bitbucket</a> ' repository. Further evidences can be referenced from Iteration-0 & Iteration-1 individual Retrospective. <b>All the Evidences including updated Iteration-2 can also be acquired through this Hyperlink: '<a href="#">Evidence</a>'</b>
	IT Skills		Throughout the Trimester, I have demonstrated proficient IT skills regarding my 'Machine Learning' role through perseverance & adaptability of machine learning codes. Given our timelines, I had 5 weeks to develop Pedestrian & Wi-Fi model from scratch including new features. My work demonstrated a High Distinction standard as I have consistently exhibited exceptional capability across the machine learning front and delivered entrancing results at the end.	I was tasked with Pedestrian & Wi-Fi problem where I have included these new features ( 'Google Maps API' service integration, Reverse Geocoding, creating lockdown stages, Geo-spatial & normal clustering, handling data imbalance for multiclass classification using 'SMOTE' & 'RandomUnderSampler', Boosting (XGBoost) & other supervised Machine learning models (Decision Tree, KNN & SVM), Neural Network (LSTM)). This can all be referenced from Iteration-0 & Iteration-1 individual Retrospective. <b>All the Evidences including updated Iteration-2 can also be acquired through this Hyperlink: '<a href="#">Evidence</a>'</b>
		HD		
Advanced	Self-Awareness		Throughout this Trimester, I have done SWOT (Strength, weakness, opportunities & threats) analysis on myself while going through the project to improve project outcomes. Due to which I was able to have great communication with my peers including teammates, seniors, mentors, panellists & client. I also took up the leadership role & managed all the juniors at the end of the unit. Overall I acquired new skills & enhanced my skill set to a great extent which made this unit very enjoyable.	Being familiar with supervised, unsupervised & deep learning techniques helped me understand the 'Wi-Fi/Pedestrian' problem to a great extent. Studio Sessions, Client meeting, Internal Scrum meetings, ML discussions, Data visualization discussion, Scheduled lectures and lecture materials, chats with seniors & teammates, helped me lot towards the overall project completion with teammates in a given time frame. The evidences can be referenced from Iteration-0 & Iteration-1 individual Retrospective. <b>All the Evidences including updated Iteration-2 can also be acquired through this Hyperlink: '<a href="#">Evidence</a>'</b>
	Project Management		Throughout the trimester, I have approached this unit with various project management techniques (like Agile & Scrum) that I acquired throughout the unit	I provided all the sequential steps required in completing the 'Pedestrian & Wi-Fi' problem in detail. Also included Project scoping,
		D		

			from LinkedIn, lectures & unit materials which helped in project scoping, delegating & presenting updated & improved verifiable results at the end.	Lectures, Squad meetings, internal scum sessions, Studio Sessions, certifications & Research. The evidences can be referenced from Iteration-0 & Iteration-1 individual Retrospective. <b>All the Evidences including updated Iteration-2 can also be acquired through this Hyperlink: '<a href="#">Evidence</a>'</b>
	Mentoring	D	Throughout this Trimester, I have helped & shared ideas, resources, doubts & results with teammates on various occasions regarding Machine Learning & Data Visualization part, & later in fine tuning of final Pedestrian & Wi-Fi model which lead to improved project outcomes and made us complete project deliverables in given timeframe. My performance in this area warrants at or above distinction level.	I also took in account of all the feedbacks from our client, mentors & panellist & later worked on it rigorously. In this iteration, after updated codes & dataset submission, I have created a 'Handover Document Team' with all the juniors at the end in order to work efficiently as a team & received daily updates about the work. Later, merged all the sections & fine tuned the whole document under senior supervision. The evidences can be referenced from Iteration-0 & Iteration-1 individual Retrospective. <b>All the Evidences including updated Iteration-2 can also be acquired through this Hyperlink: '<a href="#">Evidence</a>'</b>

In the light of Trimester 3, 2021, it was scheduled in an intensive mode & at the start I was worried about completing the project deliverables in the given time frame as we were dealing with a total of 4 projects (**Tree, Pedestrian, Wi-Fi & Fire Problem**) & communication with my teammates. At the start of the unit, I was tasked with **2 projects (Pedestrian & Wi-Fi Problem)** where I developed the whole project from scratch included many new features & Machine Learning Models while up-skilling my self rigorously. I conducted myself in a professional, ethical & respectful manner with my colleagues which made our team bonding very strong. I made very crucial Trello cards & checklists to maintain the structure of our Project by following project scoping. I have also helped & shared ideas, resources, doubts & results with teammates on various occasions regarding Machine Learning & Data Visualization part. Even, contributed on designing & relaying tasks for future iterations. I also took in account of all the feedbacks from our client, mentors & panellist & later worked on it diligently which showed exceptional results at the end of our project. I even showcased my work to Panellist, client & mentor which was very lucid & entrancing to the audience. Also, gave & received feedbacks of our overall work from teammates which was great for future references. After completing all the codes I always updated my work to Bitbucket with detailed comments so that further work can be continued by the Data visualization & Web Development Team by maintaining a hierarchical structure which showed my professionalism in my work.

Throughout the unit, I have enhanced myself showcased great **interpersonal skills, IT skills, team building skills, leadership skills & Project management skills** throughout our project completion which helped our team to deliver efficient & quality project deliverables in time. My work demonstrates that I have achieved all assessment criteria for SIT374/SIT764 & showcased myself to a **Higher Distinction (HD)** standard overall.

(All evidences can be referenced from Iteration-0, Iteration-1 individual Retrospective. **All the Evidences including updated Iteration-2 can also be acquired through this Hyperlink:** [‘Evidence’](#), [Trello](#) & [Bitbucket](#))

## Part 2: Meeting of Unit Learning Outcomes (ULOs)

<b>UL01 Applying Professional Practice</b>
Throughout this Trimester, I conducted myself in a professional, ethical & respectful manner while showcasing great interpersonal skills with my colleagues to guarantee the accomplishment of our project. I have been effectively associated with each team activity across all aspects of the project. I have been an exemplar to my team as I shared ideas, resources & contributed my skills & knowledge which helped us achieve project deliverables in time.
<b>UL02 Knowledge and Practice of Project Management</b>
Even as a Junior, I have showed exceptional leadership, dependability & integrity towards our project by showcasing my capabilities in Studio session, Squad meetings, internal scrum meetings & client meetings, & delivered project deliverables in timely fashion under senior supervision. I have also actively participated in project scoping & contributed my technical skills for efficient & successful project completion.
<b>UL03 Applying contemporary IT methods &amp; achieving Customer and Project Needs</b>
Throughout the Trimester, I have exhibited my capability to manage all parts of our project through proficient IT skills, interpersonal skills, leadership, project scoping & team building in order to achieve project deliverables in time. Given our courses of events, I developed Pedestrian & Wi-Fi models from scratch and also included various techniques while building machine learning models in a 5 week period. At the end, also created a ‘Handover Document’ group where I managed the juniors for Handover document completion & later merged all sections & fine tuned the whole document under senior supervision with great enthusiasm.
<b>UL04 Applying Discipline Knowledge to achieve Project Outcomes</b>
My commitments throughout this Trimester covered the scope of abilities that I’ve acquired throughout my degree enveloping Machine Learning skills (Supervised , Unsupervised & Neural Networks), Project management skills (like Agile & Scrum), team building skills, leadership skills, communication skills & Data visualization skills which led to successful completion of our project deliverables & enthralling presentations.
<b>UL05 Taking Ownership of Personal Performance</b>
I’ve been diligent & consistent throughout the Trimester & also showcased great interpersonal skills, IT skills, team building skills, leadership skills & Project management skills throughout our project completion. I’m an exceptionally capable individual & good in solving complex problems even in dire situations which helped our team progress exponentially. I also have flourished throughout the Trimester & improved my overall skill set with my teammates which made this unit very enjoyable.



## Part 3: Lessons Learnt - Individual

### The most important things I learnt:

Artificial Intelligence & Data Science is rapidly evolving & changing, many industries are linking their products via AI and ML for faster processing of data & computation. This unit made me familiar about how to deal with Real-world data, project management, team building & how to work in a professional team for delivering project deliverables in a specific time frame using project scoping. It taught me about various data science & machine learning tools, and python libraries in order to understand and solve real world applications. I learned how to approach & solve complexities in project deliverables with proper knowledge & understanding.

### I feel I learnt these topics, concepts, and/or tools really well:

I'm confident about my approach to topics like 'Git, Data wrangling, Reverse Geocoding, Geo-spatial clustering, Handling imbalanced multiclass classification, Series to Supervised conversion, supervised, unsupervised & Neural networks, Hyperparameter Tuning of ML models, Data Visualization, Project Management (Agile, Scrum etc.) ' & using these techniques & ML models on a real-world dataset using various python libraries and tools. I also learnt tools like GCP (Google cloud Platform) for Google Maps API integration, Tableau for Data Visualization, Trello for Project scoping & Bitbucket for data & code management to plan projects, collaborate on code, test, and deploy.

### I found the following topics particularly challenging:

Initially finding a reliable & legit dataset was the most challenging part. Afterwards, learning Git, GCP (Google Cloud Computing), Bitbucket, Tableau & topics like 'Reverse Geocoding, Google Maps API integration, creation of Lockdown Stages, Geo-spatial clustering, Handling imbalanced multiclass classification, Series to Supervised conversion, Hyperparameter tuning of ML models and debugging, Data Visualization (Map-plots) & Neural Networks (LSTM, Bi-directional LSTM, GRU & Simple RNN) were really challenging as they required a broader knowledge from various scientific journals, seniors, related websites as well as unit materials. I needed to explore & research a great deal about these topics and put in additional efforts, so I can easily grasp the underlying principle behind each topic and can use these topics in my future endeavors.

### I found the following aspects particularly interesting:

In this intensive trimester, working with enthusiastic seniors & teammates on a real-world dataset & coming up with innovative ideas, Machine learning models, Visualizations & team work strengthened my communication, team building, leadership, problem solving & python scripting skills. I also found all the topics that I have covered for completing project deliverables very intriguing as every topic has its own significance in Data Science and Machine Learning field. Furthermore, to accomplish Distinction or Higher Distinction I researched a lot while completing project deliverables, maintained integrity & showed great interpersonal skills with my teammates. I really enjoyed this unit and will further gain deeper understanding in Data Science, AI or ML applications using these topics as a base.



### I still need to work on the following areas:

An AI engineer, AI Specialist or Data Scientist has a profound knowledge of python & various tools and libraries to analyze big data and knowledge to comprehend AI or Data Science applications. I still need to work on my project management skills & python scripting abilities utilizing different machine learning tools & libraries to analyze or visualize datasets while culminating the rudiments and learn new technologies along the way with the purpose that I can later apply my skills in innovative future ventures to help society advancing towards a more technological area.

### The things that helped me most were:

First, the Weekly lectures provided by Professor Dhananjay & Atabak were very crucial in learning project management, unit structure & learning outcomes. The Squad meetings, internal scrum meetings, Studio sessions (by Fatemeh) & client meetings played exceptionally imperative part in comprehension and executing the project deliverables in a given time frame as they were lucid & articulate which permitted me to extensively perceive the concepts. While completing the project deliverables, various scientific journals related to the topics were very helpful as well as some topics related websites like- Medium, kdnuggets, pluralsight, analyticsindiamag, GeekforGeeks, analyticsvidhya, stackabuse, stackoverflow, etc., which provided more insight in the required topics.

### If I did the project unit again, I would do the following things differently:

I would have learned & zeroed in additional on some machine learning tools beforehand & also further upgrade my python scripting skills for better project outcomes. As the unit was captivating, engaging & challenging. I took in a ton from this unit overall which ultimately strengthened my communication, team building , leadership, problem solving & python scripting skills & this will also assist me with my future ventures in Data Science or Machine Learning field.