

CHAMELEON

FOR OUR SMARTER WORLD

Task 11.2P

Chameleon



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Executive Summary

Our Mission

Given the complexity of energy application needs today, IoT systems are being designed to address a wide variety of existing problems.

At Chameleon, our mission is to research, create, test, document and deploy IoT-based solutions to enhance life through the application of smart city technologies. Including the building of smarter cities, homes, transportation, and energy management systems.

Our Structure

In Chameleon there are three active divisions that focus on a specific strategic area of importance. The divisions are as follows:

- City of Melbourne Open Data (MOP)
- Chameleon Website (CW)
- Electric Vehicle Adoption Tools (EVAT)

Chameleon Website

The Chameleon Website is a user-friendly and informative gateway to the Company, it targets potential clients and the public to showcase the company's initiatives and achievements. The website continues to evolve aimed to enhance user experience and engagement using responsive design, mobile optimisation, and SEO strategies. These objectives aim to communicate Chameleons vision and projects to create a dynamic and secure online presence. Furthermore, the project is to be deployed on Google Cloud Platform and have an integrated deployment pipeline and implementation of an AI Summary.

Electric Vehicle (EV) Adoption Tools (EVAT)

The EV Adoption Tools project is dedicated to promoting the increased adoption of Electric Vehicles (EVs) in Australia. This initiative supports the reduction of fossil fuel dependence, decreases greenhouse gas emissions, and positively impacts the environment. The primary adoption tool is a mobile app that allows user to perform EV charger identification and route navigation according to user vehicle and personal preferences. The EVAT Website also provides EV related information and data science related applications.

City of Melbourne Open Data

The City of Melbourne Open Data collaborates with The City of Melbourne to enhance knowledge and develop applications for businesses, researchers, and software developers. Through the educational platform 'The Melbourne Open Playground' (MOP), they investigate the potential uses of Open Data, aligning their efforts with Melbourne's Smart City strategies.

Leadership Team

Company Director: Dr Azadeh Ghari Neiat

Chameleon Website

Senior Leaders: Umair Mohamed Feroze

Junior Leaders: Randi Tamasha Gunasekara Henadeerage Dona, Julian Douglas Holland, Su Myat Win, Adityan Balamuralidharan, Chandrakanth Kunapareddy, Kushani Imanthi Ranasinghe, Divyanga Chathurangi Samarawickrama Lokuhetti, Harshitha Shashidhara, Farit Zafar, Varun Kumar, Haritha Denuwan De Silva Asuramuni , Kholud Abdullah o Almutairi

Electric Vehicle (EV) Adoption Tools (EVAT)

Senior Leaders: James Davies, Mukul Kamalkant Singh

Junior Leaders: Goutham Krishna Bala Murali Krishna, Shut Keung Chan, John Collins, Nirmal Antony Mariadoss, Hue Minh Nguyen, Barani Shanmugasundaram, Sonam Chewang Dorji, Thenusan Santhirakumar, Eswar Sivan Sethu, Thilini Fonseka

City of Melbourne Open Data Project

Artificial Intelligence:

Senior Leaders: Lucas Kocon, Sahana Gollapalli, Akin-Dada Tolulope

Junior Leaders: Khoi Nguyen Bui, Logan Guilding, Mobasshar Nomani, Nihar Jalela, Anh (Alex) Tuan Truong, Kaimon De Bruijne

Data Science:

Senior Leaders: Thomas Alexander Rostov, Akintomiwa James Aremu, Katrine Chan, Samiha Haque, Sachitha Sadeepa Kasthuriarachch, Manasa Nagaraja, Quoc Bao Ngo, Francis Albert Rusli, Madhuvaishali Thakoor, Venuka Hirushan Wijenayake, Liny Jose Alias, Aishwarya Mahajan, Dinuk Nadishan Kariyawasam Senadheerage

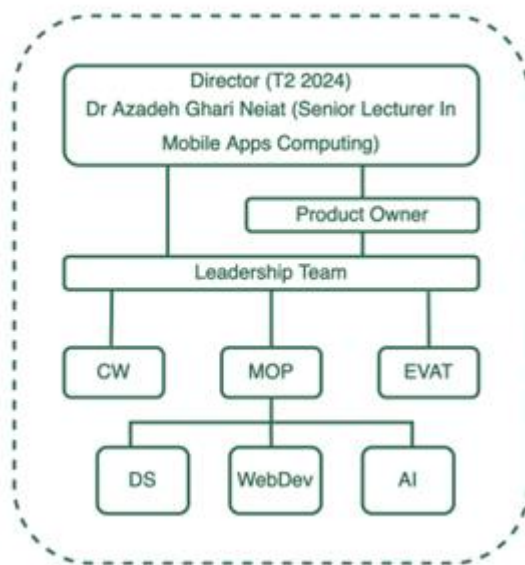
Junior Leaders: Harsh Dwivedi, Emmanuel Clement Anthony, Jnaneshwari Beerappa, Sri Tharaka Sandamal Dadigalage, Sai Priyamvada Kuntamukkala, Awaze Ur Rahaman Mohommed, Chathumini Rashmika Satharasinghe, Samarth Dipakkumar Shah, Wanni Achchige Chathurika Deshani Siriwardena, Adersh Antony Thekekuttu Michael, Wijesinghe Arachchige Uvini Chamathka Wijesinghe, Naga Nikhil Woopalanchi

Web Development:

Senior Leaders: Hoang Duy Vu, Thamasha Galahena Galahahena Mudiyanseelage, Adrian Thilina Weerasinghe

Junior Leaders: Danish Kumar

Company Structure



Mission & Vision

At Chameleon, our objective is to leverage IoT technology to develop and implement smart city solutions that are efficient, sustainable, and enhance energy usage, transportation, and urban living.

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Trimester 2 Goals and Objectives

This trimester the City of Melbourne Project seeks to develop its new Artificial Intelligence team to utilize Machine Learning and AI techniques to forecast trends, optimize resource allocation, and improve urban living conditions through intelligent data analysis. In addition, the team will focus on creating new use cases, performing API repointing of old use cases and implementing existing ones to get the site up and running. The website team seeks to further enhance its UX and design (focusing on a more user-friendly experience) and implement multiple backend services (such as MongoDB) as well as transferring from AWS to GCP hosting solutions. The EVAT team will be restructured into an App/Web team and a data science team. The focus for the App/Web team is to rebuild a new Mobile App after unsuccessful attempts in Trimester 1 to debug the existing Mobile app. The Mobile App will focus on providing user specific location data for current EV chargers and provide route navigation services throughout Australia. The data science team will enhance and optimise the current route navigation algorithm and look to identify and build out additional data science related use cases.

Trimester 2 showcase video

[Chameleon Company Showcase Video T2 2024.mp4](#)

Projects Overview

Chameleon Website

Overview

The website serves as a dynamic platform to not only publicize the achievements and progress of Chameleon but also to engage with stakeholders, including clients, partners, investors, and the public. By providing comprehensive information about Chameleon's overarching goals, values, and accomplishments, the website aims to enhance transparency and foster trust among its diverse audience.

Goals and Objectives

The main objectives of the Chameleon company's website are multifaceted, aiming to provide a centralised hub where visitors can access comprehensive information about Chameleon and its subsidiary companies. This one-stop destination is designed to advocate for the company's mission and promote its services while ensuring the website remains visually appealing and user-friendly.

Aims This Trimester

This trimester, our main goals are to enhance the website's usability and engagement. We'll improve the UI/UX across the system, develop the system's backend, optimise images for faster loading on mobile devices, ensure browser compatibility, enhance accessibility, implement a newsletter signup popup, optimise performance, create interactive tools for CRM management, incorporate a user feedback mechanism with an enhanced analytics dashboard, and finally deploy the application on GCP. These efforts aim to provide a seamless and enjoyable experience for all users.

Deliverables

- Enhance all forms with error handling.
- Integrate Post Management.
- Optimize images for faster loading on mobile devices.
- Improve browser compatibility.
- Perform Whitebox and Blackbox testing.
- Optimize website performance.
- Incorporate a user feedback mechanism.
- User roles and permissions.
- Deployment of GCP.
- Pipeline development for improved standards.
- Code Refactoring
- Code Clean Up

Mid Trimester Update:

- Requested GCP Credentials for deployment.
- Fixed CSS across all screens
- Register User Screen completed.
- Profile Screen Component Developed with Change Password and Edit User features.
- Support Page Enhanced

- Improved Chatbot CSS

Summary of Achievements:

- Enhance all forms with error handling.
- Integrate Post Management.
- Optimize images for faster loading on mobile devices.
- Improve browser compatibility.
- Perform Whitebox and Blackbox testing.
- Optimize website performance.
- Incorporate a user feedback mechanism.
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- Support Page Enhanced
- Improved Chatbot CSS

Chameleon Website Project Team Member:

Student Name	Student ID	Semester Contributions
AKASHDEEP	223040483	<p>During Sprint 1, I made significant contributions to our project by familiarizing myself with onboarding materials and assisting teammates with project setups. I actively participated in team meetings, brainstorming enhancements for the Chameleon project's Support page. I have redesigned Support page by creating skeleton design, added header and footers to maintain consistency, updated FAQs for better user experience.</p> <p>In Sprint 2, I created feature branches to implement a rich text editor with dynamic content editing and structured rendering (React Quill) for 3 pages (Innovation, Technologies & statistics). I refactored components for improved content management, added real-time editing capabilities, and ensured cohesive design using Tailwind CSS.</p>

		<p>In Sprint 3, I focused on enhancing the Login and Signup pages by removing icons while maintaining consistent UI design.</p> <p>I successfully merged my 3-pull request #210-for sprint 1, #230 for rich text editor in sprint 2 and #245 for enhance login page in sprint 3.</p>
SIREESHA AKURATHI	223796895	<p>Throughout this trimester, I have played a key role in leading the front-end development team, focusing on enhancing the user experience and ensuring seamless integration between the design and backend systems. My contributions include successfully integrating Firebase for real-time data synchronization and user authentication, significantly improving the website's functionality and responsiveness. I led the development of robust authentication systems to handle account creation, login, and secure data handling, ensuring a smooth and secure user experience.</p>
KHOLUD ABDULLAH O ALMUTAIRI	223816048	<p>Throughout the journey of this project, I have demonstrated leadership skills and technical expertise. In the first sprint, I focused on fixing the CSS across all screens, enhancing UI consistency. I also took the initiative to lead internal teams, efficiently manage task allocation, and foster collaboration. During the second sprint, I introduced the AI Summary feature and worked closely with Umair, while tracking the team's progress to ensure execution. My role also extended to mentoring colleagues and seeking resources in collaboration with other teams. I identified and resolved a critical bug in the Chameleon website interface and created a three-step project briefing plan in the third sprint, leading to the completion of the task. I contributed by developing key front-end components, reviewing code, and assisting my teammates in merging changes. By ensuring successful code merges on GitHub, the accomplishments demonstrate my ability to lead, solve problems, and foster teamwork.</p>
ANENA GHOSH	223792684	<p>I classified comments based on content clarity, navigation, and usability in order to identify recurrent problems and areas for improvement from user feedback I collected and analysed from the live assistance website. As a result, the support website was redesigned, and a search bar was included for easier information discovery. Based on user testing, the website underwent incremental changes with a focus on improved accessibility employing borders and dropdown menus. Every modification was painstakingly recorded for monitoring and reporting purposes. A skeletal design with question dropdowns was made with an emphasis on usability. I finished writing a thorough status report that detailed my accomplishments, events, and</p>

		<p>upcoming responsibilities. I also looked at free API endpoints and started studying AI-powered content summary. I was able to effectively implement API endpoints to improve the functionality of the support system.</p>
<p>HARITHA DENUWAN DE SILVA ASURAMUNI</p>	<p>223131339</p>	<p>During this execution, I worked as a junior leader and successfully completed all the tasks that I was assigned working on three different tickets chosen from MS Planner I've managed to lead teams, assign tasks and guide them to meet the end requirements. The main tasks from my contributions can be shown as, cleaning and fixing the sign-up page, adding new user inputs to save in Firebase, implementing a dynamic password validation component on the sign-up page, fixing the sessions for login, implementing a test Firestore instance and saving user data from the sign-up page, implementing an admin dashboard to retrieve user information from Firestore with admin functionalities such as promoting/demoting users, implementing multiple blog pages with latest details about ongoing projects of Chameleon. Additionally, creating and managing branches for tickets, fixing merge conflicts on them and merging them to the master was also a part of my role.</p>
<p>ARMAN BAKHTIARIASL</p>	<p>220492498</p>	<p>During this project, I worked with the MOP-WEBDEV team on Terraform. I participated in weekly meetings, collaborating with team members and leaders. My main focus was on documenting Infrastructure as Code (IaC) using Terraform. I successfully deployed a container on Azure with Terraform and created a detailed step-by-step guide for the process. Subsequently, I expanded this documentation by deploying an instance on Google Cloud Platform (GCP) and wrote a comprehensive guide on how to deploy an instance in GCP with Terraform. Additionally, I hosted a team meeting and volunteered to assist the team leader with various tasks, such as reminding team members to fill out the contribution sheet. I also volunteered to be a team leader for Project B in the next trimester</p>
<p>ADITYAN BALAMURALID HARAN</p>	<p>223145266</p>	<p>I have successfully forked and tested the deployment of the project, implementing continuous integration and deployment (CI/CD) through GitHub Pages. I modified the routing to use hash mapping, updating the routes in the constants.js file accordingly. After testing the project on Google Cloud Platform (GCP), I encountered permission issues, preventing successful deployment. To streamline the</p>

		process for deployment via GitHub Pages, I added an Express server by creating a server.js file and made changes to the Dockerfile for easier configuration.
MOHAMMAD BEHBAHANI NIA	222514502	<p>In sprint 2, I collaborated with my team to implement a rich text editor using React Quill. I worked on integrating an edit button that toggles the editor and prepared a save function to store content when database credentials are available. I created my own Git branch to work on this feature and, after testing, merged it into the team's branch. Regular meetings with the team, leader, and mentor, along with task tracking via Microsoft Planner, ensured clear communication and progress tracking.</p> <p>In sprint 3, I focused on screen responsiveness tasks. My team and I discussed technologies and divided the work, determining who would handle specific pages. I have implemented responsive design across the pages assigned to me, header and footer section in all the pages, focusing on adapting layouts for various screen sizes, particularly between 768px and 1200px.</p>
DANIEL BLAIR	223215521	<p>I have now completed the creation of fully operational IoT device and corresponding systems for real-world deployment. The work I have demonstrated in recent sprints has been a significant step forward, and I've incorporated advanced functionalities like distance measurement, Wi-Fi connectivity, server communication, and real-time notifications.</p> <ul style="list-style-type: none"> • Connected Microcontroller Using Secure Protocols: Connected a microcontroller to Wi-Fi using secure CoAP and DTLS IoT secure communication. • TCP Socket Server & Communication: Set up a TCP socket server and enabling real-time data transfer between the IoT device and server. • Final Code & System Integration: Integrated core IoT functions into a final codebase, showcasing end-to-end device-server communication. • Mobile App: Created an app that receives push notifications for new distance measurements, using Firebase Cloud Messaging. • End-to-End Integration: Demonstrated full system operation with real-time updates and data logging.

UMAIR MOHAMED FEROZE	218118134	<p>In my recent project contributions, I took on a senior leadership role by initiating a communication strategy and fostering project dynamics, which enhanced team collaboration and efficiency. I provided both technical and non-technical assistance to my colleagues, hosting internal meetings to align our objectives. Engaging in pair programming allowed me to share knowledge and best practices in coding, while my focus on code refactoring and peer code reviews ensured high-quality deliverables. Additionally, I adhered to GitHub best practices to streamline our version control process. Technically, I addressed CSS inconsistencies across all screens and developed a resource and support page, improving user experience. I also led various tickets, including work on the profile screen and AI summary, which involved collaborative efforts in pair programming, emphasizing teamwork and collective problem-solving throughout the development cycle. Overall, my contributions significantly enhanced both project outcomes and team synergy.</p>
RANDI TAMASHA GUNASEKARA HENADEERAGE DONA	222470203	<p>During Sprint 1, I developed the CSS for the Chatbot page, enhancing the user interface with color themes, hover effects, and buttons with functional links. I also updated the JavaScript page to the ES7 standard, refactoring the code for better performance and easier maintenance.</p> <p>In Sprint 2, I worked on the 'User roles and responsibilities' ticket, focusing on frontend development for the admin dashboard. I implemented components to display users, teams, projects, and contributors, along with a table to retrieve user data from Firestore, improving the dashboard's functionality and user experience.</p> <p>In Sprint 3, I handled the 'Project resources' and 'Replace all images with SVG or icons' tickets. For 'Project resources,' I gathered information from senior project leaders and created blog pages for the MOP web development and DS team projects, linking them on the main project page. For the SVG task, I replaced images with scalable icons using Font Awesome.</p>
JULIAN DOUGLAS HOLLAND	220330887	<p>Development of secure coding practice in documentation, as well as application security testing in relation to cybersecurity. Leadership for group task as allocated in planner. Delegation of tasks within planner group relevant to other team members relevant interests and skills, as well as management of team to ensure deliverables. Internal discussions in both team and leadership meetings. Implementation of secure coding practices in password</p>

		hashing techniques and theory-based application. Lead for leadership meeting where necessary.
NICHOLAS KANAKIS	221280572	For this project, I contributed by improving the user login interface, enhancing the profile screen component, and integrating Firebase for better backend functionality. I also worked on optimizing the screen responsiveness to ensure a smoother user experience across different devices. These tasks have significantly improved the usability and security of the application, aligning with the project's overall goal of building a reliable and user-friendly system for Chameleon. My efforts have helped create a seamless user experience while ensuring the backend infrastructure is secure and well-integrated, contributing to the success of the project
YUVRAJ KAPOOR	220252511	I'm excited to share the progress made in Sprint 3, where I established an initial test environment using Quil as our Rich Text Editor. This setup will serve as a valuable reference as we integrate the editor across the website. Focusing on enhancing the user interface for the Sign Up and Log In pages, I integrated React Icons for the Email, Password, and Confirm Password fields, which significantly improves visual clarity. Additionally, I implemented clear input box outlines and specified password requirements to enhance user experience. In terms of code quality, I applied CSS best practices, ensuring that our code remains clean, maintainable, and well-commented. I actively participated in team sessions, aligning our discussions with project objectives and fostering effective communication. I've also assigned myself tickets to refine CSS for the Technology, Statistics, and Innovation resource sections, with ongoing amendments in progress to meet our design and functionality standards.
MUHAMMAD JAHANZAIB KHAN	223739038	In Sprint #3 , the primary focus was on enhancing the login screen to improve the overall user experience and align with the project's design goals. The enhancements started with significant CSS improvements , aimed at refining the visual aesthetics of the interface. This involved modernizing the layout, updating button styles, and optimizing the overall user interaction flow. One of the key actions was the removal of unused icons , which had previously cluttered the login and signup screens. This step helped streamline the interface, making it more intuitive and visually appealing, based on earlier user feedback.

VARUN KUMAR	223758153	Leading the "Edit Resource Page" ticket, I led my team in adding new features such as a Comments Section and a Modal Form. Personally, I was solely responsible for implementing Firebase Realtime Database and Backend data Fetching using GET APIs. Currently, the resource pages' content is fetched from the firebase database backend and displayed on the front-end using GET APIs, when earlier it was and hard-coded content strings. I organized meetings throughout the 10 working weeks of this trimester, organised and scheduled sprint meetings to assess and update my teammates. I even helped them learn Git Workflow basics for seamless Git Integration. Overall, I played a major role in ensuring successful completion of this ticket. The feature branch I led was "varunkumar-Edit-Resource-Page" and my personal branch was "varun-backend". I made sure to resolve any merge conflicts between teammates' branch and in the final Pull Request to the master branch.
CHANDRAKANTH KUNAPAREDDY	223798216	During this sprint, I served as Junior Team Leader and handled key tasks. In Sprint 1, I successfully integrated Firebase with the backend, participated in team meetings, and worked closely with the mentor to ensure alignment with project needs. My pull request was reviewed, committed, and worked as expected. In the 2nd sprint, I was assigned to implement password validation on the backend, a crucial task that I completed ahead of schedule. Despite encountering a few issues on GitHub, I resolved them, and my pull request was approved. These tasks contributed to both the project's success and my personal growth, as I effectively managed and solved issues that arose.
STEPHEN HOANG LONG LE	218244778	My contribution to the project involved replacing the social media images with react icons, in order to improve performance of the web application. Moreover, I addressed the background body colour issue when scrolling. Additionally, I improved the comment feature by implementing the backend side of things in order to retrieve, store, and display comments.
MOULIK MAHAJAN	224258246	joined the fixing css ticket and made the contact and about page. I have added the headder and footer to it also added the background animation to about page and added the home button to it and its at the center of the page and the page is enhanced including the css of all sizes In the contact page page I have creaeted the card which contains the phone email and contact , Added the copy function to it so when the user click it automatically get copied to the clip board, Added the send Email button so that email get box

		<p>automatically open but also added the copy button while the send email button automatically open the email and the chameleon website email is selected by default which saves the time of the user. Enhanced the part in making the css improved of the screen also participated in making</p>
SUBRAMANYA N S	223113345	<p>Throughout the project, I significantly contributed to Chameleon Company's website, particularly the Resource page. I implemented key features like the "Security in IoT" card and improved the overall design. I developed an interactive "edit" button for dynamic content updates and integrated a Rich-Text editor for advanced formatting. Additionally, I implemented role-based access control to maintain content integrity.</p> <p>On the backend, I connected the front-end to Firebase for data storage, developed API routes, and integrated them with the frontend. I also created a modal form for adding new resources directly from the frontend, storing them in the backend, and dynamically reflecting changes.</p> <p>I enhanced user engagement by implementing an interactive flipping card feature in the Security section and a voting system for resources. I actively participated in team meetings, proposed innovative ideas, and used project management tools to coordinate tasks and meet deadlines effectively.</p>
BHUPENDRA PANDEY	223249955	<p>Worked on 'change password' ticket for sprint 2 where I contributed on implementing Axios route for handling API requests to change passwords and validating password on frontend side. This involved writing and managing function calls, fixing API endpoints, handling responses and errors, enforcing strong password requirements and validation among others. For sprint 3, I took on 'screen responsiveness' ticket where I worked on resources, contact and news and insights page for designing responsive webpage. I used tailwind CSS classes for fixing layouts and making design changes. This did involve following best practices and UI design principles. Importantly, responsive design was implemented across all pages to make the components react suitably on all screen sizes from small to big screens. Apart from technical contribution, I made managing and collaborating effort by creating groups in MS teams and taking leadership role in task management among team members and communicating progress.</p>

BRITTANY PATTERSON	219462585	Successfully designed and implemented a functional comment section (front end only). Continuously added functionality to this throughout the trimester, including timestamps, and a field for the author to add their name to the comment. At one stage, the comment section featured a geolocation feature, to fetch the location of the comment author. After considering potential privacy/security/consent concerns related to this, this feature was removed. Ensured that the design fit in seamlessly with the current website. Successfully added this feature to all cards on the 'resources' page, after troubleshooting re: compilation issues. Created a document re: getting the front-end project set up – aimed toward beginners with no prior experience with Visual Studio. Added detailed comments throughout code, to ensure project continuity.
KUSHANI IMANTHI RANASINGHE	223251652	I made significant contributions to the Chameleon website throughout all three sprints. In Sprint 1, I expanded the Chatbox Toggler across all website screens, ensuring consistent user access. I also improved its visibility by repositioning it, aligning with UI best practices. In Sprint 2, I worked on the user roles and responsibilities ticket, focusing on the frontend development of the Admin Dashboard. I developed a component displaying post titles, authors, and actions like Edit, Hide, and Delete, enabling admin users to manage posts effectively. In Sprint 3, I handled the Replace all images with SVG or icons ticket, using Font Awesome to replace images on the Home page with scalable icons, optimizing performance and load times. As a Junior Leader, I participated in team discussions, ensuring tasks were aligned with the project timeline, resolving issues, and contributing to decision-making. My leadership kept the project on track and promoted team collaboration.
DIVYANGA CHATHURANGI SAMARAWICKR AMA LOKUHETTI	223590519	I have actively contributed to the project throughout all three sprints. In Sprint 1, I collaborated with my team to enhance the chatbot's CSS, improving its overall design and user experience. During Sprint 2, I implemented tables in the admin dashboard to streamline data presentation and management. In Sprint 3, I worked with the team to convert all images into SVGs using FontAwesome for better scalability and performance. Additionally, I completed all required documentation and actively participated in mentor and leadership meetings to ensure smooth project progress. I have also committed all the work I completed during the three sprints into GitHub for proper version control and team management of the project..

HARSHITHA SHASHIDHARA	224120377	<p>Integrated Google Cloud Platform (GCP) services to enhance security and scalability for the Chameleon website.</p> <p>Led the initiative to clean up and refactor the CSS for the Chameleon website, improving code maintainability and enhancing user experience.</p> <p>Developed and optimized front-end components using React.js, focusing on usability and responsiveness.</p> <p>focused on improving project feasibility by identifying and implementing technical solutions that aligned with company objectives. Worked on CI/CD pipeline implementation, automating deployments and ensuring smoother integration and delivery of code changes.</p>
PHUC DAT TRAN	222134337	
FARID VAZIRNIA	222470713	<p>In the Chameleon website project, I have made significant contributions to both the design and functionality of the site. Initially, I improved the login page by enhancing its CSS layout, refining input fields, and re-positioning elements to create a cohesive and user-friendly interface. In Week 6, I worked on the IoT Updates page, focusing on content structure and integrating a rich text editor for dynamic content management. Additionally, I ensured that the site is fully responsive, adapting to different screen sizes. My work also included testing, debugging, and refining the register page to improve both aesthetics and usability, ensuring an optimized user experience across devices. I will continue to enhance the site's functionality and layout</p>
SU MYAT WIN	222385178	<p>In the past few weeks, I have completed two sprints for the CW project. In these two sprints, I focused on the user roles and responsibilities ticket, as well as replacing all static images with SVGs or icons, which helped streamline the interface. During sprint 2, our team created an Admin page, and I contributed by adding a search bar component, allowing the admin to easily search and view members from the database. Moving into sprint 3, I took on the task of updating all the images used in the chameleon bot, transforming them into dynamic and interactive icons, enhancing the visual experience and usability of the system.</p>

HAOYANG YU	218413818	Over the past week, I took an active role in our team meetings, where we covered the progress of current tasks and outlined upcoming objectives. My main priority has been refining the home screen to enhance the overall user interface and experience. This effort included making a series of improvements, such as eliminating inline CSS to ensure the code is cleaner and easier to maintain, while also aligning with front-end development best practices. I also worked on password backend validation, ensuring passwords meet specific strength criteria. Using a function from <code>./services/passwordValidator</code> , the <code>checkPasswordStrength</code> method extracts the password from the request body and validates it. If the password doesn't meet the criteria, it returns an HTTP 400 error; if it does, it responds with HTTP 200 and a success message. A POST route to <code>/validate-password</code> triggers this validation process, providing feedback on password strength.
FARIT ZAFAR	223632851	I developed an <code>IoTResources</code> component for my web app, aiming to create a user-friendly experience for exploring IoT resources. It allows users to keep track of recently viewed items and bookmark their favorites. By using React's state management and local storage, the app saves this information even after users leave, so it's easy to pick up where they left off. The recently viewed section updates on its own as users browse, making it simple to revisit resources. I also added a search function to quickly filter through content, which is handy when new resources are available. To ensure the design looks great across devices, I used responsive CSS styling, with flexbox for a clean layout and hover effects to add a touch of interactivity. Overall, the goal was to create an engaging and accessible interface that simplifies browsing and interacting with IoT resources.

City of Melbourne Open Data Project – Melbourne Open Playground (MOP)

Overview

Since 2014, the City of Melbourne has been at the forefront of Open Data in Australia. In partnership with Deakin, they promote the increased use of their Open Data by businesses, researchers, and developers. As a key component of their smart cities strategy, the Melbourne Open Data Playground (MOP) website will showcase MOP's operations, intelligent data analysis, security details and use cases that align with its goals and objectives.

Goals and Objectives

The project's objective is to develop an educational platform centered on practical applications of open data, designed for diverse stakeholders such as industry experts, government agencies, and academic scholars. The long-term goals include mining and

tracking the City of Melbourne's open data, offering innovative solutions to the city's challenges through data analysis and AI techniques, increasing data usage rates, and supporting urban smart strategies.

Aims This Trimester

The focus is on assisting the initiation and setup of the newly formed Artificial Intelligence team, systematically addressing each published and upcoming notebook, and modifying and updating previous code to ensure proper functionality when downloaded.

The goal of the Data Science team is to develop a collection of IoT-based use cases that align with the City of Melbourne's three predefined areas of interest: Business Activity, Transport and Safety, and Environment and Wellbeing. The team plans to complete a full set of ready-to-publish use cases while also preparing a backlog for the next trimester, and repointing APIs of old use cases using API v2.1. Additionally, the team will migrate from Trello to Microsoft Planner to enhance project management efficiency, propose and create new use cases, complete unfinished ones, and update the organization in GitHub and MS Teams directories to improve overall workflow and collaboration.

The primary goal of our web development team is to integrate our website with user cases supplied by the Data Science team, enabling easy access through a sophisticated database solution. Additionally, we aim to deploy, rigorously test, and ultimately host the City of Melbourne's website. Our efforts will also extend to enhancing the website's design, framework, and features, ensuring a seamless and engaging user experience.

And finally, the emerging Artificial Intelligence team will seek to create novel AI-integral applications that align with Chameleon's smart city vision of technologies that facilitate for greener and more sustainable living. The team seeks to do this by developing artificial intelligence processes, collecting and annotating data for training and testing, and deploying the trained algorithm into use-case products. The new team will also create new use-cases as a backlog of products to meet any new demand for AI products and organise its workflow assets to create effective work immediately.

Deliverables

AI Team

- *Began development of 4 different artificial intelligence projects between a total of 22 team members*
- Vehicle Classification has had many vehicle categories complete and ready for integration with open-source object-detection software and undergo application development.
- Health Behaviour analysis has undergone major data clean up, created machine learning analysis and developing its own natural language system for reporting insights.
- Chatbot Service project has many core NLP features programmed and integrated into Rasa, and awaiting a rigorous build before application development.
- Traffic Analysis has had multiple modules of analysis completed and reports have been made with a demonstrable build created

Data Science Team

- *Migrate from Trello to Microsoft Planner for project management.*
- *Prepare for the release of analysed use cases that are completed.*
- *Generate five new ideas for use cases to maintain the team's ongoing productivity.*
- *Develop three to eight relevant and valuable use cases to be published.*
- *Continuously update data and APIs for early project cases to ensure the latest analysis, while replacing old files with API v2.1 to enhance the reproducibility of analysis.*
- *Continue to update and improve the file systems of GitHub and Teams to facilitate efficient navigation and guidance.*
- *Update old documentation with the latest file updates.*
- *Manage and upload the large use case files on GitHub.*
- *Continue to complete the backlog in MS Planner.*

Website Development Team

- *Publish all completed tasks on Planner.*
- *Migrate all tasks from Trello to Microsoft Planner for better project management.*
- *Ensure the establishment and maintenance of a fully functional website with uninterrupted operational capacity.*
- *Establish a dedicated database and integrate a webpage on the site where the data science team can seamlessly upload their work.*
- *Enhance the design system by refining symmetry and incorporating more intricate details. The objective is to develop a purpose-driven design that enhances the overall user experience.*
- *Conduct testing for the website.*
- *Work in conjunction with AI team to add more features to the website.*
- *Perform CI/CD pipeline tests on the website.*
- *Host the completed the website on a webserver (GCP).*
- *Make the website more user friendly.*
- *Add and refine the existing functions of the website.*
- *Integrate useful figures such as account management functionality and multi-language support within the system, dark and light mode throughout the entire website.*
- *Ensure the website is responsive across various platforms for seamless user experience on desktop, tablet, and mobile devices.*

Summary of Achievements:

AI Team

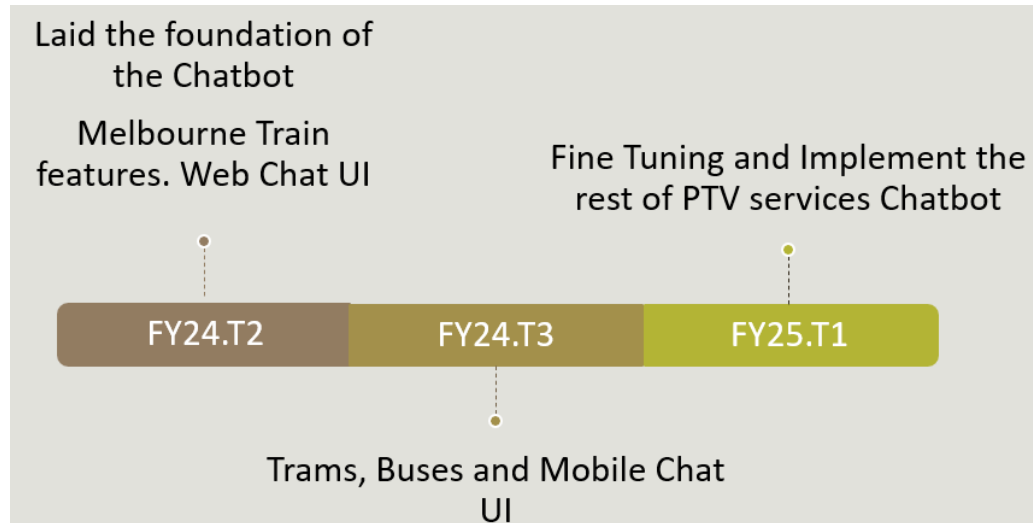
- Created a new AI team within the Chameleon team that has independently operated in creating artificial intelligence projects
- Vehicle Classification contains 3705 catalogued samples between 13 categories of vehicles as defined by the design brief provided at the start of the trimester, where the collection can be modified at future team's discretion when a better model or way of thinking is employed. The creation of a recognition application plus a traffic jam alert

system demonstrating this technology has been shown in client meetings with positive results and can be completely developed for public use by later members.

- The subtasks of the project Traffic Analysis were completed, including the application of machine learning models to each component. Furthermore, we have also developed a PowerBI dashboard in order to make the presented insights more accessible to the user base without the heavy involvement of technical resources. In this way, it will be easy for all kinds of stakeholders, whether IT or non-IT, to understand the data and results. We combined state-of-the-art machine learning further to improve our study on road safety and enhance traffic management analysis with an intuitive visualization tool in the form of PowerBI. Our system provides powerful yet easy-to-understand insights for any broad range of audiences. Aside from the PowerBI dashboards, some of the subtasks were generated into written reports which have been uploaded to Github along with their associated tasks. In terms of continuation for next Trimester, some of the subtasks have reached a state of completion, whereas others have team members who wish to continue their model development into a new Trimester. New subtasks could be generated using new data sources relating to Melbourne traffic.
- The health behaviour team subtasks were completed, the team achieved remarkable progress by developing and integrating predictive models using Python. The team created a robust health behaviour prediction model that analyzes factors such as age, gender, percentage of likelihood, and location to forecast behaviours like smoking, physical activity, vaping, and mental health. This algorithm was integrated with a Gradio-powered chatbot, allowing users to predict likelihood health insights in a location. Python played a key role in building and fine-tuning the prediction model, utilizing its libraries for data preprocessing, machine learning, and prediction. Additionally, the team expanded its focus by developing an algorithm to predict safety at night based on environmental and demographic data. Although this safety algorithm was thoroughly tested, it has not yet been integrated into the chatbot system. The project's success highlights the team's expertise in algorithm development, real-time interaction with Gradio, and the ability to predict both health behaviours and safety risks, marking significant advancements in the company.
- The Service Chatbot has had plenty of natural language processing contributions together to demonstrate via a textual Melbourne journey planner. At the end of this trimester, a number of features have been implemented into the chatbot. These include generating a map of public transport stops across Melbourne, being able to request real time train information from the chatbot, discovering if any changes should be made on a route, and providing mapping and directional functionality from the user's location to their nearest stations and from their last station to their destination. Our team developed a front-end UI allowing the chatbot to be accessed in a visually appealing manner, and some initial tests were made to deploying the chatbot to the GCP. There is room for continued work in this project for the next Trimester, such as to increase the speed of the chatbots responses, improving the chatbots ability to

accurately understand different entities input by users, and increasing the functionality of the chatbot to include a greater variety of public transport lines into the system.

- Chatbot product roadmap



- Implementation status

ID	Name	Status			
		Coding	Integrated with Rasa	Integrated with WebUI	Deployed to GCP
REQ_01	Basic Route Planning				
REQ_02	Schedule Information				
REQ_03	Transfers and Connections				
REQ_04	Route Optimisation				
REQ_05	Accessibility				
REQ_06	Real-time Updates				
REQ_07	Finding Nearby Stations				
REQ_08	Searching by Name				
REQ_09	Directions to/from Stations				
REQ_10	Real-time Information				
REQ_11	Filtering Stations				
REQ_12	Station Details				
REQ_13	Train stations map				
REQ_14	Route Modes				
		Legend			
			InProgress		
			Done		

Trimester 2 AI team use case video summary:

MPT Chatbot and Mapping - Showcase.mp4

Data Science Team

- Migration from Trello to Microsoft Planner for project management has been completed.
- 51 total use cases (42 new and 9 old) use cases existed across three focus areas:
 - 14 in Business and Activities
 - 24 in Environment and Wellbeing
 - 13 in Transport and Safety
- 37 use cases have been completed and are ready to publish.
- APIs of 3 use cases have been repointed and are now using APIv2.1.
- Completed two audits of use cases on MS Planner and GitHub.
- 14 Use Cases and 10 API repointing have been made available for next trimester

Trimester 2 Data Science Use Case video summary:

Web Development Team

- The migration from Trello to Microsoft Planner for project management has been completed, and the platform is continuously updated with the latest project status.
- A design document was created to have a guideline for future designs in the next Trimesters.
- CI/CD pipeline has been completed with 11 stages.
- Terraform has also been added.
- Dark mode design is completed and will be implemented in the future.
- Mobile design has been completed.
- The website has been redesigned to be more user friendly.
- A MongoDB has been connected to the website and database related functionalities have been implemented.
- Calculated the GCP budget to create a proposal to Deakin to get GCP access.
- GCP access was granted, and the website was hosted using GCP.
- The use case page has been redesigned.

Trimester 2 Web Development Team website walkthrough video:

[MOP WEBDEV T2 2024 Showcase.mp4](#)

Melbourne **Open Data Project Team Members:**

AI Team

Student Name	Student ID	Semester Contributions
NAUMAN ABID	223429271	
TOLULOPE EBENEZER AKIN-DADA	223022696	<p>I conducted a detailed analysis of traffic flow using Power BI, visualizing data for road names, dates, and vehicle types, providing clear insights into traffic patterns for better decision-making.</p> <p>In Python, I performed advanced data processing and visualization, complementing the Power BI analysis and uncovering deeper trends.</p> <p>I developed a Traffic Flow Prediction Model using Long Short-Term Memory (LSTM) networks to forecast traffic flow based on road name, date, and vehicle type, offering accurate predictions for traffic management.</p> <p>I contributed to vehicle classification by annotating data for vehicle class 12, which was crucial in training AI</p>

		models and improving the accuracy of transportation management systems.
BROCK DYLAN ALEXIADIS	220256787	Over the trimester, I contributed significantly to our team's vehicle classification project. I gathered and labeled around 800 images of various vehicle types, including two-axle trucks, four-axle trucks, unknown vehicles, and four-axle articulated trucks, for training with the YOLOv8 model. I tested these images with the model to ensure accurate performance and created a step-by-step tutorial to guide other members in replicating this process. Additionally, I developed a tutorial on data augmentation to enhance our dataset. For the project's web application, I implemented the Python back end and contributed to the front-end using HTML and JavaScript. Lastly, I created a detailed tutorial explaining how to run the web app locally, enabling team members to deploy and test it on their own machines. These efforts streamlined our project's workflow and supported the team's overall progress.
KHOI NGUYEN BUI	222515797	Utilizing an AI model that I have developed and refined for the accurate counting of the speeds of cars on city streets in my current position at Chameleon Company, with a backbone of YOLOv8, real-time precise identification of traffic congestion using this model sends automatic email notifications to road authorities aimed at efficient mitigation of delays in traffic flow. Complementary to this, I have also applied machine learning to improve traffic data analysis and visualized important insights using PowerBI for strategic traffic management. My other key contributions include responding to the queries of my team members in time and making tutorial videos for educating them about different tool usages. Also, I have been doing quite rigorous reviewing of their work. I believe in constructively providing feedback on pull requests to make sure the deliverables are correct and of good quality within our project team.

KAIMON DE BRUIJNE	221287183	Gathered, cleaned and sorted the "Feeling of safety at night" data from the "social indicators of city of Melbourne residents" for the past 6 years (2018 - 2023). I created a model to plot the data and use linear regression to make a prediction for the next 2 years. It can plot any combination of age range, gender and suburb (e.g. female, 18-24 or male, 35-44, Carlton) and will take the mean of those values to give unique plots and predictions for any combination. I also helped leading my use case, guiding the other members with their technical contributions.
LAKSH GILHOTRA	222437252	I designed and implemented an AI chatbot for the MOP AI project, integrating a health behavior prediction model. This model offers personalized health insights based on user inputs like age, gender, and location, using machine learning to analyze patterns and predict behaviors such as smoking, physical health, vaping, and mental health by location. I also optimized the chatbot through testing, resolving bugs, and ensuring reliability. Additionally, I implemented error handling and user guidance, providing clear feedback for invalid inputs. By structuring the interaction step-by-step, I improved the chatbot's conversational flow, enhancing user engagement and data accuracy while delivering accurate health predictions and a seamless user experience.
SAHANA GOLLAPALLI	222508953	This semester, I worked on an in-depth "Melbourne Smoking Behavior Analysis Report" that examined smoking behavior across gender, age, and various locations in Melbourne. Using advanced machine learning models like Random Forest, SVR, and Linear Regression, I developed predictive models to identify key factors influencing smoking likelihood. Throughout the process, I joined meetings with Ella and collaborated with fellow classmates for guidance and support. I utilized visualizations such as heatmaps and bar charts to communicate insights and recommended targeted interventions for public health strategies. The report provides a strong foundation for understanding smoking behavior in Melbourne and suggests actionable steps for future research and policy development.

LOGAN GUILDING	220589655	<p>This trimester I joint led two projects. One was the traffic analysis team. Within this I selected and compared multiple models (Random Forest, XGBoost, and Logistic Regression) for the task of identifying high speed zones in Melbourne. I performed parameter tuning to find the strongest of each model type and selected the strongest model (XGBoost) to perform speeding predictions. I also led the construction of the data preprocessing pipeline.</p> <p>I joint led the chat bot team in which we developed a chat-based transport planner. I constructed mapping and directions features to generate visual and written advice on journeys and integrated this our NLP framework Rasa. I also fine-tuned a spacy model to improve entity detection relating to user inputs. I spent significant time upskilling and guiding team members on using appropriate ML models, ensuring that their tasks produced useful outputs. I also performed numerous code reviews for my team.</p>
NIHAR RAMESHBHAI JALELA	223040509	<p>I began by analyzing crime prediction in Melbourne, visualizing data to determine the probability of specific behaviors, such as smoking, in various suburbs. I experimented with several machine learning algorithms, including Logistic Regression, XGBoost, Random Forest, and Decision Tree models. Following this analysis, I presented my findings in a client meeting and will be presenting them again at the upcoming Innovation Festival (InnoFes) for MOP AI. Additionally, I worked on generating three mock datasets for further crime prediction and tested multiple machine learning models. After fine-tuning the models, I selected Logistic Regression as the best-performing model. The purpose of this model is to predict crime occurrences in any Melbourne suburb at a specific time, ensuring the accuracy of the prediction and providing valuable insights for improving public safety.</p>
JING KANG	223765611	<p>In this project, I was responsible for the collection and labeling of the images to ensure that we had a high-quality dataset. I labeled each image in detail to provide accurate information for subsequent model training. In addition, I created a simple AI model specifically designed to discriminate between high- and low-quality images. By choosing appropriate features and algorithms, I successfully improved the recognition accuracy of the model, a process that not only enhanced my technical skills, but also gave me a deeper</p>

		understanding of the application of machine learning and the fundamentals of image processing.
HNIN EI KHAING	221021624	For subtask 5 within the Traffic Analysis team, I focused on building a predictive model to analyze the likelihood of different traffic compositions (Heavy, Light, and Mixed Traffic) on various road segments. Using a multinomial logistic regression model, I trained the model on traffic data and identified key features, such as vehicle types, road segments, and speed limits, to make accurate predictions. I applied feature scaling and evaluated the model's performance using classification metrics and probability distributions. My analysis highlighted the segments most likely to experience heavy traffic, providing insights that can inform infrastructure planning and road management. My contributions were also successfully approved merged into the master branch on Github.
LUCAS KOCON	218510242	I have been among many leaders creating a new AI team that has been developing 4 major AI projects. Of which I have co-led the Vehicle Classification alongside Kevin whose been critical in leading the technology behind our project. Among our many classes, I contributed with 220 samples for the Three-Axle Articulated vehicle category and offered our members the direction to make a simple vehicle detection application to demonstrate the technology to our CoM client. Within the team I have constantly offered advice in our AI work with sample collection and ways to edit our files when our project variables change, plus advice for OnTrack submissions. I have offered content reviews for our VC project on GitHub between approvals converting to mergers, and requests for changes between corrections in the requirements of the tasks and major structural adjustments the working member has to make.
ETHAN JASON LONGMUIR	222369928	For this trimester I worked on developing an AI for classifying vehicle types and sizes following an already created list of vehicle classifications. I collected over a thousand images and filtered through them having over 250 images, for 2 axle bus and 5 axle articulated trucks, sampled to help train the AI. I also drew up quick basic plans on what a website could look like so the team had an idea of what the end goal would look like. I have

		worked on developing a basic website, working with my team I was able to create a dropbox where images can be dragged into it and uploaded displaying the result when the AI identifies the vehicle.
NANCY NJOKI MBUGUA	221080099	In Use Case 5 of the Capstone Project, the key achievement was the successful integration of health behavior data with night-time safety perceptions in Melbourne. By analyzing smoking, vaping, and self-reported physical and mental health, the project developed a predictive model using a RandomForest classifier. The inclusion of crime data enabled the creation of a Perceived Safety Score, which quantified night safety across different locations. This score was used to predict health outcomes, highlighting the link between safety and behaviors. The project employed fuzzy matching to standardize location data, allowing for seamless merging of health and crime datasets. Additionally, the model provided real-time safety feedback, determining whether locations were generally safe at night. These insights offer valuable recommendations for health campaigns and public safety policies, contributing to a deeper understanding of how safety perceptions influence health behaviors in Melbourne's population
MD MOBASSHER NOMANI	222499162	During this project, i have attended most of the team meetings and had some private meetings with qasem, logan and lucas. I have designed a system that predicts the CO2 emission during different period of time for different segments of the roads. this will help to calculate the amount of CO2 emitted by vehicles in certain areas and will help to prevent it I am having a problem with the prediction part. I had a meeting with ella, she told me as I am a junior, I can finish it by next trimester. I have created pull requests on Github for all the tasks. I had very low knowledge about github . I have attended few online course to learn it.
HARIPRASAD PULICKAL VENUGOPAL	223736039	I have made significant technical contributions to the chatbot project. I developed key features for the real-time accessibility data processing system, allowing users to receive up-to-date information on station amenities. I have implemented custom actions in the Rasa framework, optimized the chatbot's backend for efficiency and improved user experience design based on real-world feedback. Initially I have created the UI for the chatbot and we were able to make interactions

		through the web UI, then I deployed UI in GCP VM instance. I have actively collaborated with my team, supporting integration tasks and resolving technical challenges. Currently I have completed two use cases which was assigned to me. My contributions, including handling pull requests and providing technical guidance, were pivotal in enhancing the chatbot's performance and usability.
HAMZA NADEEM RANA	223703819	<p>I actively participated in all scheduled team meetings, contributing to discussions and sharing ideas to foster collaboration. Additionally, I engaged in meetings with our mentor, where I gathered valuable insights and feedback that helped refine our project direction. A key task I undertook was compiling comprehensive data for the previous five years on the percentage of people who feel safe in Melbourne during the day. I meticulously cleaned this data to ensure accuracy and reliability, which is crucial for our analysis.</p> <p>Using linear analysis, I predicted the safety perceptions for the next two years, providing our team with actionable forecasts that can inform future strategies. I implemented filters that streamlined the analysis, allowing us to focus on the most relevant information quickly. Overall, my contributions have aimed to strengthen our project and support our objectives effectively.</p>
SARFARAZ SYED	222599005	<p>During this semester, I worked on subtask 5, Strategic Road Segment Analysis, in Use Case 10 of the Traffic Analysis project. I started by preprocessing the data, including data cleaning, and then performed Exploratory Data Analysis (EDA) on traffic volume and speeding incidents across different road segments. After analyzing the data, I trained several models, including Extra Tree Regressor, XGBoost, and LightGBM, to find the most accurate model by comparing their R^2, RMSE, and MAE scores. I used data filtering and validation for both Extra Tree Regressor and LightGBM to improve predictions. Hyperparameter tuning using RandomizedSearchCV further increased model accuracy for LightGBM and XGBoost. Additionally, I identified the most important features for the Extra Tree Regressor and plotted predicted vs. actual traffic volumes. Finally, I used KMeans clustering to analyze high-priority segments and identified high-risk segments using LightGBM.</p>

ANH (ALEX) TUAN TRUONG	220213034	<p>Since Task 5.1, several key technical contributions have been achieved.</p> <p>I developed the Web UI for the MPT Chatbot, allowing users to interact seamlessly. I resolved technical challenges, ensuring the mapping functionality and chatbot worked in tandem for a smooth experience. A virtual machine (VM) was set up on Google Cloud Platform, and the MPT Chatbot was deployed to the production server, making it accessible online. Ensuring the chatbot's functionality, four key use cases were completed.</p> <p>I led the chatbot development, overseeing project management, monitoring, and tracking the implementation of these use cases. I supported the Health Behaviour use case by initiating the GCP setup and reviewing multiple pull requests.</p> <p>A demo video of the Melbourne Public Transportation Chatbot was created for the InnoFess event and the final client meeting presentation, showcasing the chatbot's capabilities and progress. This comprehensive work highlights the successful deployment and technical robustness of the MPT Chatbot project.</p>
ZIQIN ZHAO	217590332	<p>1. I was responsible for collecting images and labels for six of the vehicles and checklist, which includes Double Road Train, M.A.D, B Double, Heavy Truck Trailer, Three Axle Truck and Three Axle Bus—totaling 1020 images and labels. And all these images are high-definition and of high quality.</p> <p>2. I completed the training work of the yolov8 model and obtained a model with a mean average precision (mAP) exceeding 85%. It passed the test in YouTube videos and can be used in other applications.</p> <p>3. I completed the work of yolov8 plus depth estimation. I selected a mature monocular depth estimation scheme. By combining the two, it is possible to calculate the distance between the object in the target box and the camera and output the result to the image.</p>

QASIM ZIA	223778177	<p>or the Vehicle Classification project, I led the annotation and detection of vehicles using MakeSense.ai and implemented machine learning regression models to classify different vehicle types. I ensured accurate data preparation and trained models that improved classification accuracy. The project was submitted to GitHub with all necessary documentation, highlighting my contributions to the development of AI-based vehicle recognition.</p> <p>In the Traffic Analysis project, I took a leadership role in preparing the dataset and applied Random Forest Regression to predict road wear and tear. I also generated a detailed Power BI report to visually represent traffic patterns and infrastructure impact.</p>
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Data Science Team

Student Name	Student ID	Semester Contributions
EMMANUEL CLEMENT ANTHONY	223064878	<p>Throughout the trimester, I focused on analyzing key datasets to assess public transport accessibility in Melbourne. I merged transport stop data (bus, tram, and train) with pedestrian count data, providing a detailed understanding of transport availability and foot traffic patterns. Using spatial analysis techniques like proximity calculations and heatmaps, I highlighted high-traffic areas and gaps in transport services. Additionally, I integrated new data sources to enhance the project, refining my skills in cleaning, structuring, and analyzing real-world datasets. I actively participated in weekly data science meetings, sharing progress and receiving valuable feedback from mentors. A significant contribution was hosting the Week 6 Data Science meeting, where I led discussions to ensure we stayed on track with our deliverables. My efforts resulted in the development of an interactive map showcasing public transport stops and pedestrian activity, offering valuable insights for improving transport infrastructure in the city.</p>

AKINTOMIWA JAMES AREMU	222497446	<p>In my weather classification and prediction project, I played a key role by applying advanced data analysis and machine learning methods to build an accurate prediction system. I worked extensively with different weather datasets, thoroughly cleaning and processing the data to ensure high-quality results, and analyzed key patterns involving temperature, humidity, wind speed, and atmospheric pressure. By utilizing machine learning models such as SVM, Random Forest, Decision Tree, AdaBoost, and Logistic Regression, I developed a robust and reliable weather prediction system.</p> <p>Beyond my technical contributions, I took on a leadership role by creating a comprehensive function list for the company, complete with detailed documentation and a video guide to support team understanding and usage. Additionally, I contributed to developing API endpoints, created use cases to guide team members, and actively participated in code reviews, ensuring high standards throughout the project.</p>
JNANESHWARI BEERAPPA	223724697	<p>I actively participated in reviewing and providing feedback on my teammate's code on GitHub. After carefully evaluating the code, I accepted the changes and approved the pull request, ensuring it met our project requirements. I also added my name as a reviewer in the T2 2024 pull request reviewers spreadsheet. In addition, I contributed by assisting in resolving a few doubts had regarding the code and project requirements. This collaboration not only helped improve the overall quality of our codebase but also fostered stronger teamwork.</p> <p>with my use case, Handling Data Issues: Resolved issues with missing location data and optimized the geodesic distance calculation.</p> <p>Business Insights: Provided insights into potential areas for business establishment based on dominant industries and competition.</p>

KATRINE CHAN	221375343	I actively engaged in a range of leadership tasks, including migrating from Trello to Planner, managing the COM_Team_List, and overseeing the onboarding process. I organized and facilitated meetings, onboarded DS and AI members, as well as all company leaders, into their respective groups, and contributed to shaping the DS team. Additionally, I coordinated client meetings, prepared presentation skeletons, and managed post-meeting communications. I completed Task 6.1 for the company, which included creating a skeleton document and a contribution spreadsheet. I also reviewed pull requests, provided feedback, and assisted with organizing meetings and presentations. I supported junior team members and hosted the Week 9 DS meeting. For my use cases, I completed data cleansing, exploratory data analysis, and visualizations. I implemented ARIMA forecasts, conducted evaluations, and drew conclusions for the first use case. For the second use case, I analysed locations for new drinking fountains based on pedestrian count data.
SRI THARAKA SANDAMAL DADIGALAGE	223634765	During the trimester, I led the "Nearby Restaurant Hotspots" and "Urban Flood Management and Emergency Response" use cases for our capstone project. I was responsible for API repointing, data cleaning, and creating geospatial visualizations using Folium. For the restaurant hotspots analysis, I focused on Small CLUE Areas, performing Worker-to-Seat Ratio calculations and clustering analysis to deliver actionable insights. Key milestones included completing the analysis, generating HTML and JSON files, and successfully completing the final pull request. I also began work on the Urban Flood Management use case, ensuring steady progress. My efforts ensured both use cases met their objectives, with a strong focus on technical precision and teamwork.
DALJEET KAUR	222049265	i have completed my usecase by doing preprocessing and data modelling .first i cleaned the two datasets that i uploaded using API and after cleaning the datasets i did data analysis and secondly i did data visualization and found correlation between differents features and ater this i did data modelling. in data modelling i used linear regression model to find training and testing score.I attended mentor meetings and took help from teammates when i found i got stucked .I have contributed to each task .After completing data modellling i craeted final pull request and got it reviewed by teammates and then i merged the pull request and moved my usecase into ready

		to publish folder and after doing this all i deleted by branch.
HARSH DWIVEDI	222483528	I successfully completed a use case by applying a machine learning algorithm to identify business hotspots in Melbourne CBD. I analyzed data to highlight key areas of business activity and potential growth, integrating the ML model into the project workflow and providing insights and recommendations. I contributed to the 11.2P submission and the showcase video. I conducted an MS Planner audit, moving cards from Sprint 2 to the backlog. I hosted the W8 DS meeting and several weekly leadership meetings. I reviewed several pull requests, trained a model on random forest regression, and hosted multiple leadership meetings. Additionally, I performed feature engineering, updated cards on Planner, joined the GitHub review team, and created visualizations using Folium. I also assisted fellow students and contributed to the review and submission of 6.1P and 2.1P ontrack tasks.
MENGQIAN GONG	223065159	Throughout the trimester, I've been working on the usecase "Investigate the Effect of Business Type and Residential Properties on Energy Consumption". Based on previous work, I've further undertaken a comprehensive statistical analysis of datasets to identify key parameters influencing energy consumption. This analysis employed three distinct methods: the correlation matrix, OLS regression, and a tree-based model, specifically a random forest. The process involved evaluating the importance of various features, providing visualizations of the results, and discussing the minor variations observed across these methods. Additionally, I have assessed the generalizability of the random forest model by applying it to feature matrices from datasets of previous years, evaluating the predictions through quantitative metrics. To complete the project, I have also developed thorough documentation that outlines the entire process, detailing the methods used and the conclusions drawn.

SABRI SERKAN GULLUOGLU	217249723	I spent this trimester on advanced data processing for preprocessing data and find the most effective way of real time parking availability and predictive modeling of parking analysis. This, decode categorical variables, do correlation analysis, as well as resampling data in different time frames to observe parking status trends. I developed various models using Tensorflow including ARIMA, LSTM, SVR, and Prophet aimed at predicting available parking spaces this resulted in a comparison of their accuracies by assessing RMSE. I engaged myself in exploring how data drift affects prediction models through checking other measures that assure the model remain accurate over time. I have had Melbourne Council's upcoming 2030 goals in mind, which include; optimization of parking systems, improvement of urban mobility. I added my future plan on this use case is to carry out user behavior analysis. In general, I implemented feature engineering, hyperparameter tuning, data augmentation for model optimization.
SAMIHA HAQUE	223935632	I played a key leadership role in organizing group chats, migrating Trello to MS Planner, creating an MS Planner guide, and completing Task 2.1P. I audited use cases, cleaned Teams folders, GitHub, and use case ideation document. I hosted meetings, guided Junior Leaders, ideated 11 new use cases, reviewed 14 pull requests, and provided regular updates. For Innofes, I actively participated, prepared the pitch, and presented at Deakin. In the use case "Parking Availability Near Places of Interest in Melbourne," I assessed parking availability by inputting user locations. I utilized geopy for coordinate conversion, applied Haversine distance for proximity, used cosine similarity and TfidfVectorizer for relevant term identification. For the second use case, "Analyzing and Forecasting Tree Canopy Loss in the City of Melbourne," I analyzed tree canopy loss with GeoPandas using five datasets and multiple regression models, including neural networks and resolving heteroscedasticity with WLS and Cook's distance.

SABIH UL HASSAN	221429583	<p>I contributed to optimizing urban greening efforts and improving road safety by focusing on data retrieval, cleaning, and pre-processing. In the Urban Greening Strategy project, I removed duplicates, handled missing values using statistical methods, and standardized data formats. I conducted Exploratory Data Analysis (EDA), generating geospatial maps to highlight forest distribution and greening potential in Melbourne. Additionally, I performed correlation and outlier analysis to ensure data accuracy and identify key relationships. In the Traffic Congestion and Accident Correlation project, I applied machine learning techniques to analyze traffic data, predicting accident severity and identifying high-risk areas. Technically, I cloned the project repository, created branches for each use case, and pushed my code to the master repository. I actively participated in code reviews, provided feedback on pull requests, and volunteered to assist during Sprints. I maintained regular communication with my mentor, reported progress weekly, and adjusted my approach based on feedback.</p>
LINY JOSE ALIAS	223057444	<p>I completed two significant use cases: Optimizing Public Amenities and Exploring Accessibility for Disabled People in Melbourne. These projects involved comprehensive data science workflows, including data collection via API requests, preprocessing, exploratory data analysis, feature engineering, machine learning (using models like RandomForestRegressor), geospatial analysis, and results visualization with interactive maps. Additionally, I updated an existing use case on public transportation planning, repointing API, creating HTML and JSON files for publication.</p> <p>In terms of leadership, I prepared the agenda and hosted two meetings: the Week 7 Data Science meeting and the Week 8 CoM leadership meeting essential for aligning team objectives. I also reviewed pull requests, went through them thoroughly, provided feedback, helped members with their usecases. To support future team members, I developed comprehensive documentation on the Data Science Project lifecycle, offering guidance on navigating use cases successfully. These contributions showcase my ability to drive projects forward while supporting team development.</p>

TAEHWAN JUNG	223239943	<p>In this project, I analyzed tourism impact. I reviewed relevant papers to ensure that the dataset was suitable for my desired solution and ended up loading an additional dataset. The analysis involved data extraction, preprocessing, and machine learning techniques such as time series analysis and k-means clustering. Additionally, I applied regression and correlation analysis to explore the relationships between the datasets. Due to the characteristics of the use case, the analysis results were primarily visualized using Folium maps. The results display predicted tourist numbers for various regions and clusters from k-means on the maps. In addition to the technical contributions, I also volunteered as a GitHub reviewer.</p>
DINUK NADISHAN KARIYAWASAM SENADHEERAGE	223237065	<p>Throughout this trimester, I played a pivotal role in my capstone project by leading key technical initiatives and promoting team collaboration. I successfully completed the "Enhancing Pedestrian Safety in Melbourne's Urban Areas" use case, where I was responsible for implementing machine learning models, integrating real-time environmental data, and developing geospatial visualizations using Folium. These contributions provided critical insights for pedestrian safety and ensured the project met its objectives.</p> <p>I also created comprehensive guides, including the GitHub Reverting Changes Guide and the Planner Task Management Guide, to standardize workflows and improve team efficiency. In addition, I actively participated in team meetings, contributing by reviewing pull requests, assisting team members with GitHub issues, and ensuring smooth communication. My leadership and technical contributions were crucial in driving the project's success, while fostering a collaborative and productive team environment.</p>

SACHITHA SADEEPA KASTHURIARACH CHI	223270464	<p>In this trimester, I contributed extensively to the capstone project by taking on leadership, technical, and collaborative roles. I completed key use cases, including "Analyzing Business Activity for Cafes and Restaurants in Melbourne" and "New Business Location", where I performed API repointing, data analysis, and geospatial visualization using tools like Folium and Geopandas. Additionally, I authored and published critical guides such as the Power BI Guide, Geocoding Guide, and Distance Matrix Implementation Guide, helping streamline team workflows.</p> <p>I also developed the Planner Card Guide, which provided clear instructions for creating and managing planner cards, ensuring standardization across the team. In meetings, I regularly prepared agendas, took minutes, and supported junior members by offering guidance on meeting management and planner card updates. My active participation and leadership helped the team stay organized and progress smoothly through each sprint, ensuring that project goals were met efficiently and effectively.</p>
SINAN KILCI	222356603	<p>Throughout the project, I actively participated in all team and mentor meetings, maintaining regular communication with both my mentor and team leader. I managed four datasets initially, but due to the dynamic nature of the main dataset, I had to remove two as the project progressed. Most of my time was spent on data wrangling, where I employed predictive methods to enhance the dataset rather than cropping data with missing values. I also used predictive techniques to correct incorrect data, such as fixing instances where average wind speed values were lower than the minimum wind speed values. Additionally, I researched the effects of pollution on solar panel efficiency before conducting the solar panel analysis. To support this work, I upskilled on Folium for creating geolocational visualizations, which helped me effectively analyse and present my findings. My final pull request was approved by two reviewers, and I completed the merge.</p>

SAI PRIYAMVADA KUNTAMUKKALA	223711461	<p>Throughout the trimester, I led the analysis of public transport accessibility and health outcomes in Melbourne. Key responsibilities included data cleaning, exploratory analysis, feature engineering, and statistical modeling. I imported and cleaned data from various sources, handling missing values and ensuring data consistency.</p> <p>Using spatial analysis techniques, I visualized data relationships and addressed missing location data. I conducted regression analyses to assess the impact of transport accessibility on health outcomes, considering multicollinearity. To maintain data quality, I performed regular verification and quality checks.</p> <p>I actively contributed to the project's GitHub workflow, reviewing pull requests and ensuring code adherence to standards. My involvement in the T2 2024 pull request review process further demonstrated my commitment to the project's success.</p>
AISHWARYA MAHAJAN	222610398	<p>For technical contributions I have worked on two use cases, waste analysis at Degrares Street and identifying and analysing business distribution and employment trends for the year 2022. I have followed optimal coding practices in my use cases with proper conclusion and insights and pushed my code in the company repository.</p> <p>I have retrieved datasets, performed EDA, performed data cleaning process, performed in depth analysis and data visualizations to understand the trend and patterns. I have also implemented predictive modelling to implement machine learning models. As a part of leadership, created tutorials, data engineering documents and weekly meeting documents, helped peer members and juniors with technical issues. I have hosted weekly meetings, collaborated with other leaders for tasks such as 6.1 P contribution and provided one to one help sessions for peer members to help with use cases. I have also reviewed code and pull requests for juniors.</p>

AWAZE UR RAHAMAN MOHOMMED	223640083	<p>1. Achievement 1: I successfully completed the pedestrian and footpath analysis use cases, utilizing data analytics techniques to identify patterns in pedestrian movement and footpath usage. This involved working with large datasets, cleaning the data, and visualizing the results to extract meaningful insights.</p> <p>2. Achievement: I hosted a productive data science team meeting where I coordinated the efforts of team members, facilitated discussions on ongoing projects, and ensured that everyone was aligned on the project goals and tasks.</p> <p>3. Achievement 3: I provided valuable support to my teammates by assisting them with resolving various Git-related doubts and issues, helping them navigate version control processes more effectively.</p> <p>4. Achievement 4: I contributed to improving the overall code quality by reviewing and providing feedback on multiple pull requests, ensuring adherence to best practices and offering suggestions for optimization where necessary.</p>
ALIREZA MONTAZERI	223632922	<p>During this project, I contributed extensively to the development of an air quality prediction model by leading data preprocessing efforts, including cleaning, resampling, and normalizing the microclimate and Argyle air quality datasets. I implemented and compared both LSTM and GRU models, exploring two approaches: one using historical PM2.5 and PM10 data and another incorporating environmental factors like temperature, humidity, and wind. Additionally, I performed feature importance analysis to identify key factors impacting air quality predictions. I actively participated in reviewing and providing feedback on my teammates' code. After thoroughly evaluating the changes, I ensured the code met our project standards and approved. I made sure the updates aligned with our overall project goals and documented my process. Additionally, I added my name as a reviewer in the T2 2024 pull request reviewers spreadsheet, contributing to the team's quality assurance process.</p>

MANASA NAGARAJA	222586756	For my use case, I successfully handled data-related issues, including resolving missing location data and optimizing the geodesic distance calculation for more accurate transit analysis. I completed data cleansing and exploratory data analysis, identifying key patterns in the population and metro/bus station dataset and implemented both linear regression and random forest models to analyze population growth trends. I actively contributed by reviewing and providing feedback on my teammates' code via GitHub, I approved pull requests after careful evaluation, added my name as a reviewer in the T2 2024 pull request reviewers spreadsheet, and assisted in resolving queries about the code and project requirements. I have worked on preparing a technical document as a practical guide for juniors.
QUOC BAO NGO	220313209	<p>As a senior leader, I actively participated in leadership meetings, guiding project discussions and decisions. I led task 11, where I organized team efforts and ensured alignment with company objectives. Additionally, I created several use cases for the team, with one of my use cases selected for presentation in an upcoming client meeting. This use case focuses on using machine learning to forecast house prices, providing valuable insights for stakeholders.</p> <p>I also deployed a local application using Streamlit, allowing users to interact with the model and obtain house price predictions, showcasing my technical leadership. My role included reviewing team members' pull requests, ensuring high code quality and offering constructive feedback. Through consistent communication and collaboration, I helped the team stay focused, contributing significantly to the success of the project and the company's objectives.</p>
SAHAN CHAMOD JAYALATH PAMUNUWE MAHAVITHANAG E	223822546	Throughout this trimester, I took charge of the "Nearby Restaurant Hotspots" and "Urban Flood Management and Emergency Response" use cases in our capstone project. My responsibilities included API repointing, data cleaning, and creating geospatial visualizations using Folium. For the restaurant hotspot analysis, I focused on Block IDs, calculating Worker-to-Seat Ratios and applying clustering methods to generate meaningful insights. Key accomplishments include generating the necessary HTML and JSON files, as well as completing the final pull request. I also contributed to the Urban Flood Management use case, ensuring its steady progression. My efforts ensured that both use cases met project objectives and were delivered on schedule.

THOMAS ALEXANDER ROSTOV	221260666	Throughout this trimester I have made two major technical contributions. The first is a usecase titled Social Indicator Changes, which involves visualization and analysis of how various metrics such as year/demographic impact social indicator results. The second is Soil Analysis and Prediction, which first visualizes how soil sensor readings are impacted by different variables such as weather conditions/soil type/soil depth. Then, machine learning is performed on a subset of the data to tune/test performance of models with varying hyperparameter inputs. Once this is finished a final model train on the whole dataset, allowing custom inputs and visualization of predictions on a folium map. I have also done multiple leadership activities throughout the course of this trimester, including onboarding all new members onto GitHub, creating a couple welcome announcements, participating (hosting/taking minutes) in multiple meetings, reviewing pull requests for both sprints, helping/communicating with many company members, sending reminders for contributions.
FRANCIS ALBERT RUSLI	223045645	During this project, I generated innovative use case ideations and led the first client meeting with Remi. I actively contributed to shared company documents and maintained thorough documentation for both team and client meetings. In addition to these responsibilities, I supported junior team members by preparing presentation materials, hosting a GitHub tutorial, and addressing their queries. I participated in key discussions and meetings while also reviewing pull requests to ensure quality. Specifically, for the Melbourne tram and bus network analysis, I provided valuable insights through data cleaning, merging, and visualization tasks. My contributions included adding a third dataset, summarizing distance data, and creating geospatial visualizations with improved legends and icons. I conducted a gap and opportunities analysis and utilized K-means clustering and coverage heat maps to evaluate proximity zones, significantly enhancing our analysis.

CHATHUMINI RASHMIKA SATHARASINGHE	223413619	<p>Throughout this trimester, I played a key role in my capstone project by leading important initiatives and promoting team collaboration. I successfully completed the "Route Planner" use case, where I implemented machine learning models, integrated real-time environmental data, and developed geospatial visualizations. These efforts provided valuable insights into waste management and helped ensure the project's success.</p> <p>Additionally, I authored a comprehensive guide on handling and visualizing geospatial data using GeoPandas to standardize workflows and boost team efficiency. I also actively contributed to team meetings, including reviewing pull requests, which enhanced the quality and consistency of our work. My leadership and technical contributions were critical in meeting the project's objectives while fostering a collaborative and productive team dynamic.</p>
ROHANG RASHESH SHAH	223640421	<p>Throughout the "Tracking Unique Insect Species in the City of Melbourne" project, I have actively contributed to several critical areas. Initially, I spearheaded the data collection and integration efforts, ensuring comprehensive and accurate datasets from various sources like the Melbourne BioBlitz and Little Things That Run the City projects. My focus then shifted to applying GIS tools, where I mapped the distribution of unique insect species across Melbourne, identifying ecological hotspots and conservation priorities. I also implemented advanced statistical and machine learning analyses, including species diversity indices and predictive models using Random Forest and SVM, to analyze environmental impacts on species distributions. Throughout the project, I managed code updates and version control using Git, culminating in a successful code review and merge, ensuring robust documentation and seamless team collaboration. These efforts have been crucial in advancing our understanding and conservation strategies for Melbourne's unique insect species.</p>

SAMARTH DIPAKKUMAR SHAH	223828778	During this usecase, I utilized data science techniques to streamline the wedding planning process by analyzing various datasets, such as event permits, public artworks, and monuments in Melbourne. By applying Python libraries like Pandas, Matplotlib, and Folium, I performed geospatial analysis to identify ideal wedding venues and photogenic locations for clients. I also incorporated permit requirements into the process, ensuring planners could offer comprehensive services. Additionally, I visualized these insights using interactive maps, making it easier for planners to explore venue options and ensure compliance. My work contributes to enhancing the client experience by providing personalized recommendations based on data, improving planning efficiency. This project demonstrates my ability to leverage data for solving real-world problems, while showcasing skills in data wrangling, visualization, and geospatial analysis.
WANNI ACHCHIGE CHATHURIKA DESHANI SIRIWARDENA	223631612	In the use case I evaluated the sufficiency of on-street parking around Cafe, restaurant, bistro seats, Bar, tavern, pub in Melbourne by analysing the locations of car parking meters, parking bays, and business establishments, the City of Melbourne can ensure adequate parking facilities to support local businesses and enhance visitor convenience. I used Data Preprocessing, Visualisation, Feature Engineering, geospatial Clustering Model (Density-based), Regression Models, Random Forests models to generate the insights. I created a single final dataset with all the necessary information needed to business owners or managers. Based on the results of the analysis map visualisations can identify the variability in parking infrastructure, providing insights for local authorities and business owners to potentially improve parking facilities or offer better guidance to customers.
MADHUVASHALI THAKOOR	218335436	For my use cases, I implemented models like polynomial regression, decision tree regression, and clustering to analyse coworking spaces' impact on social well-being indicators. I also led the public transport accessibility use case, calculating accessibility scores, conducting business count analysis, and performing a walkability analysis, which highlighted how transport access influences business density and customer foot traffic. I contributed to the team's preparation for Innofes by designing the project poster, collaborating with Morgaine on improvements, and working on the pitch presentation and demo video. I actively participated in the company's 11.2 task and helped prepare the presentation for the client

		<p>meeting. Additionally, I attended and hosted meetings, took minutes, and facilitated team discussions to ensure smooth communication. I also introduced the project for a LinkedIn post and reviewed pull requests for my team members. My contribution consisted of technical development, leadership, and communication, ensuring the team's success throughout the trimester.</p>
ADERSH ANTONY THEKKEKUTTU MICHAEL	223969645	<p>"Life unfolds in distinct chapters, each age group living a different story. In this use case, I explored the differences between younger and older individuals, focusing on what shapes their lives. For younger people, priorities revolve around building their future—career advancement, personal growth, and social connections. Older adults, however, often focus on stability, health, and the relationships they've nurtured. By analyzing data, I sought to capture these contrasting perspectives, revealing how each group views wellbeing. But this was more than a statistical comparison—it was about understanding the heart of what matters to people at different stages of life. The insights gathered aim to inform better, more tailored decisions in policy and services, ensuring that both young and old can thrive in ways that align with their unique needs and aspirations. The goal is to see beyond the numbers, recognizing the human stories behind them."</p>
VENUKA HIRUSHAN WIJENAYAKE	223048223	<p>In my use case, "Capacity Forecasting and Strategic Insights for Bars, Pubs, Cafes, and Restaurants," I played a pivotal role in optimizing seating capacity predictions. I successfully integrated and pre-processed multiple datasets, ensuring high-quality data for analysis. I developed interactive map visualizations, incorporating dropdown filters with 'ipywidgets,' which enabled customizable and user-friendly insights for the team. My predictive modeling efforts included applying Time Series ARIMA and Random Forest models, which provided valuable forecasts for capacity and foot traffic trends.</p> <p>In addition to my technical work, I made significant leadership contributions by creating a comprehensive guide document on using 'ipywidgets' in Folium mapping, allowing the team to build more interactive and effective visualizations. I also actively reviewed and provided feedback on pull requests, mentored junior team members, and assisted colleagues in generating JSON and HTML files. My efforts ensured collaboration, knowledge</p>

		sharing, and the successful completion of tasks within the project.
WIJESINGHE ARACHCHIGE UVINI CHAMATHKA WIJESINGHE	223607603	<p>In this project, I analysed the relationship between urban forestry and bird populations using datasets from the City of Melbourne. I used various data science techniques and utilized Python libraries such as Pandas for data manipulation, Matplotlib for visualizations, and Folium for mapping geospatial data. First, I conducted an in-depth exploratory data analysis (EDA) on both bird and tree datasets to uncover patterns and correlations. I then visualized the areas where different bird species were spotted, along with the corresponding tree locations, by creating an interactive geo-map.</p> <p>My analysis involved examining which types of trees were more likely to support specific bird species. Based on this I made conclusions about the role of tree diversity in fostering rich bird populations. The results of this analysis provided valuable insights into the urban ecosystem, highlighting which trees are critical for maintaining bird biodiversity, which is essential for urban planning and conservation efforts.</p>

NAGA NIKHIL WOOPALANCHI	218503534	<p>This project aims to develop a comprehensive tool to support urban planners, policymakers, and business owners in economic growth and assisting local businesses in Melbourne. I have utilized Python libraries such as Pandas for data manipulation and cleaning. The data exploration phase involved visualizations using Matplotlib, Seaborn, and WordCloud to discover trends across different regions of Melbourne helping in identify relationships between business size, industry, and location.</p> <p>Additionally, I conducted geospatial analysis using GeoPandas, Folium, and Plotly to generate heatmaps showing the spatial distribution of businesses. This highlighted clusters formed across Melbourne regions in different industries, providing actionable insights and targeted development.</p> <p>Furthermore, for predictive analysis, I assessed data stationarity to apply time series models such as ARIMA, Holt-Winters Exponential Smoothing, and Vector Autoregression (VAR) using the Statsmodels library. The models were evaluated using metrics like Error metrics Among which VAR model demonstrated reliability, offering stakeholders in making informed decisions</p>
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Web Development Team

Name	Student ID	Semester Contributions
ABHISHEK CHILUKA	223046759	<p>This trimester, I contributed to the Chameleon MOP web development project, focusing on both frontend development and design. I started by learning about website responsiveness and MongoDB, then moved on to creating wireframes for the website using Figma. I also worked on implementing a dark theme for the About page. Midway through the trimester, I took on a leadership role in the design team, documenting the design process and organizing tasks. I updated the homepage's color scheme and guided the design team in applying these changes to other pages. Additionally, I assigned tasks for mobile and dark theme designs and worked on building the file upload feature for the Case Study page, submitting pull requests for all my contributions.</p>
MIHIR ARVINDBHAI DOBARIYA	223535953	<p>In the capstone project, I worked as the junior leader of the frontend team. My responsibilities included assigning tasks to team members, maintaining effective communication, and attending all project meetings. I</p>

		<p>contributed two key pull requests: one focused on fixing and updating the colors and responsiveness of the "About Us" page, enhancing both its design and usability. The second pull request involved improving the footer's responsiveness for mobile devices using React and Tailwind CSS, ensuring a seamless experience across different screen sizes. Both pull requests were successfully merged into the final project. My work contributed to a more responsive and visually consistent frontend while supporting smooth collaboration within the team.</p>
THAMASHA GALAHENA GALAHAHENA MUDIYANSELAGE	223043446	<p>During this trimester, I played a key role in setting up and deploying the Continuous Integration and Continuous Deployment (CI/CD) pipeline for the Melbourne Open Playground project. I fully configured the pipeline locally and deployed it to a VM instance on Google Cloud Platform (GCP), making sure the pipeline live and functional. I integrated MongoDB functionality into the signup page, enhancing the user registration process. I also contributed to fixing layout issues on the signup page, ensuring improved user experience. Additionally, I mentored a colleague in the IaC/Terraform team and facilitated knowledge sharing. As part of my leadership responsibilities, I hosted weekly leadership meetings and took minutes for web development meetings. I also provided key input to the team's LinkedIn post, highlighting the project's impact. Through these efforts, I ensured smooth collaboration across teams and contributed significantly to the success of our website's development and deployment.</p>
RADHA KRISHNA GAMPA	223937368	<p>During this project, in design, I created wireframes for the licensing and privacy policy pages, made pull requests, and worked on the dark theme for the licensing page. I also developed mobile view designs for the forgot password and OTP verification pages, documenting details such as fonts, colors, and themes. Additionally, I updated the Contact Us page in the light theme and both the licensing and Contact Us pages in the dark theme, with all changes documented and pull requests made.</p> <p>In frontend, I addressed responsiveness issues, ensuring the statistics page works seamlessly across different screen sizes, including mobile devices, tablets, and more. The updates were successfully merged via pull requests to improve user experience across varied device frames.</p>
RAJAT GUPTA	222435572	<p>During this project, I designed the wireframe for the log in page. I designed the light mode of the Log in page. I designed the Dark mode of the Login page. Also, the</p>

		mobile view design for the Login page. Contributed for the documentation of the same. Revised all the above one by one according to the new design requirements. Created pull requests on Github for all the tasks assigned. Attend weekly standups of the team and sub-team throughout. Upgraded Figma and GitHub skills
SACHINTHA CHANUKA SHANTHADEWA JANGUGE	222625866	I contributed to the front-end development by optimizing the signup and forgot password pages to ensure responsiveness across different screen sizes. I restructured the HTML and CSS, improving their display on mobile and desktop devices. Additionally, I implemented a dark theme, allowing users to switch between light and dark modes for an enhanced viewing experience. I tested these features on multiple browsers, including Chrome, Firefox, and Safari, to guarantee consistent functionality. These improvements significantly boosted the website's usability, ensuring a seamless and visually appealing experience for all users.
MUHAMMAD SUBKTAGEEN AHMAD JANJUA	223723734	In this Project, I have contributed to the frontend team as a sub-leader. I have helped in creating tasks for the frontend team with other sub-leaders and also in assigning them to the team members. I have also worked on the pages like contact us, Sign up and OTP Verification page. In which i have fixed its responsiveness and the design which should be according to the design provided by the design team. I have also stayed in touch with other team members and have answers there queries about the tasks and anykind of issue they been having in the task. Also, i have been participating in the weekly meetings with the mentor and keeping them updated about the tasks and the front-end team.
UPEKSHA DILSHAN KARAPITIYA PATHIRANAGE	223656754	I actively participated in weekly meetings and worked with Shevin on the Privacy Page. Despite completing the page, a miscommunication in task planning led to it not being published, but I have the code as proof of our work. Following this, we took on the task of remaking the Login Page. Starting from scratch, we redesigned it with improved email and password validation features, each contributing 50%. The new version was then merged successfully after a pull request. Additionally, we fixed bugs in the Login Page caused by the language translation feature, ensuring smoother functionality. Throughout the project, I have been consistently enhancing my skills in React and Tailwind CSS, which helped improve my overall contributions to the project, specifically in refining the design and solving front-end

		issues. These upskilling efforts allowed me to contribute more effectively and resolve technical challenges during the development process.
DANISH KUMAR	223629209	Throughout the Melbourne Open Playground (MOP) project, I have played a pivotal role in both leading and technically enriching the backend and CI/CD teams. As a sub-team leader, I effectively organized and distributed sprint tasks, ensuring that all project components progressed smoothly and efficiently. I spearheaded the development and successful integration of the "Homepage Case Study Rendering" feature using Next.js, which significantly enhanced the user interface by dynamically presenting case studies. Additionally, I led the implementation of robust security measures, including the integration of Trivy for vulnerability scanning in our CI/CD pipelines. This effort not only bolstered our deployment processes but also ensured adherence to industry standards. My contributions, documented thoroughly in the CI/CD documentation, have set a standard for future projects in terms of efficiency, security, and scalability.
SURAJ KUWAR	223183442	As the leader of the front-end and design teams, I organized the group to allocate tasks and assist junior team members with their queries. My contributions included implementing the light/dark theme for the case studies page, designing the dark theme for the home page, creating the wireframe for the case studies page, and developing the mobile view for the privacy page.
JIAQI LI	221105067	During this project, I design the wireframe for homepage, OTP and forget password pages. Also, I created the light and dark themes UI design for the OTP and forget password pages. And I make a UI design for the homepage of the mobile view. Additionally, I created pull request for those wireframes and light/dark theme and mobile view design and its successfully merged to the Chameleon working repositories. Furthermore, I participated in the preparation of the design document which are the details of the homepage, OTP and forget password pages for the light/dark and mobile view. Also, I participated in the fixing the compiled problem which caused by the sign-up page, and craeted pull request to the GitHub.
JOSHEN SHEVIN MIHINDUKULASURIYA PATABEDIGE F	223793401	Throughout the project, I worked with both the front-end and design teams, contributing significantly to the website designs, including the Privacy Policy dark mode and Licensing Page mobile view. I attended all weekly

		mentor meetings and successfully merged my pull requests into the design folder. Collaborating with Upeksha on the Privacy Page, we completed it, but due to a miscommunication, it wasn't published, although I have the code as proof of our work. We later took on the task of redesigning the Login Page from scratch, each contributing 50%, with improved email and password validation. After fixing bugs related to the language translation feature, the updated version was merged successfully. My continuous efforts to enhance my skills in React and Tailwind CSS allowed me to improve my contributions to both design and front-end development, particularly in resolving technical challenges and refining the overall design.
MINH KHOI PHAM	220189994	<p>During the period of working on this project, I have been able to successfully deliver expected results on three technical tasks in front-end development.</p> <p>Based on the requirements of the proposed designs and wireframes, I have conducted analysis of the issues in the code base and implemented front-end solutions and implementations in enhancing the visuability and responsiveness of UI/UX interface on various screen sizes and devices, allowing better adaptability and stability of content display and visual on different settings. This includes working on responsiveness of previous About Us webpage, implementing new design of About Us page based on the final proposed design, working on fixing layouts and readjustment of Privacy Policy page on different common screen sizes.</p> <p>Throughout the trimester, I have communicated my progression with team leaders and mentor through weekly standup meetings and delivered the required features and tasks in a timely manner.</p>
MUHAMMAD AHMAD RAHMAN	222035605	Throughout this project, I contributed to the designs of the website. The designs include Creating Wireframes for the About Us Page, Creating Dark Mode for the Case Study page, updating the color schemes and create a mobile view for the 2 contact us pages. I also contributed to form the design documentation where we talked about the designs. I attended the majority of the weekly mentor meetings and attended the sub team meetings as well. I was pro-active with my sub team and in the design process discussions. I've made the pull requests into the design folder.
SAITEJA RAVELLA	224013556	In the Capstone Project, I contributed to the design of the statistics page by creating wireframe diagrams and modifying the font and colour scheme for the light

		theme. I also developed a dark theme version, introducing new colours and font sizes specifically for this mode. Additionally, I designed a mobile-responsive version of both the statistics page and the case upload page, ensuring optimal usability across devices. My contributions extended to the design documentation, where I detailed the purpose, fonts, colours, and designs for future reference, ensuring a comprehensive and cohesive design process.
TYLER SHEAF	221154888	During this project, I worked on the design team. Here I was assigned with the About us page, here is where I was to redesign the page due to the clients request which was in need of fixing the wireframe, light mode, dark mode and mobile design. I also worked on a design documentation, here I put in all the design information for the About US page, Use Cases Page, Licensing Pag and Privacy Page. I also put in the universal information about the colour code. Also I have done pull request for all designs I worked on which gives people access to the designs.
CHAYA SHIV	221071557	During this MOP project, I actively participated in all team and mentor meetings. I volunteered to work on both the front-end and back-end teams. I successfully completed the front-end task of adding multi-language functionality to the signup page. I also implemented multi-language support for the login page and handled the backend task of retrieving and displaying use cases from the database. All my work has been approved, and the pull requests have been merged.
PRANJAL SINGH	218614477	Throughout the project, have actively guided and supported junior team members, attended weekly meetings, and contributed suggestions to improve the project. I helped create new tasks for the front-end team, ensuring equal contribution among members. I redesigned the statistics page for the MOP website, implementing algorithms for filters, pagination, and navigation, while ensuring responsiveness and meeting the design requirements from the design team. I also worked on header visibility, routing to the homepage, and CSS adjustments for the login page. Throughout this process, I created well-documented pull requests and consistently upskilled in Next.js and Tailwind CSS to enhance my contributions to the project.
USMAN TARIQ	217034263	To enhance the website's general appearance and feel, I made a number of changes. First, I worked on making the content on the Privacy Page readable and uniform on

		<p>all devices by adjusting the font size. By improving accessibility, this change improves the user experience. I then altered the Licensing page's background colour to make the look more unified and eye-catching. The site's overall theme is complemented by the new background. Finally, I changed the home page's background colour to match the Figma design and give the website a more contemporary and polished look. By making these adjustments, the website maintains a polished, unified appearance that enhances both usability and appearance.</p>
VENKATA RAGHAVA NAVEEN VEEDHULA	224099224	<p>During this project, I contributed to the front-end development by making significant changes to the user case page in line with the Figma design. I focused on improving the layout and grid structure, ensuring that the page was both functional and visually cohesive with the rest of the website. Additionally, I worked on the Privacy Policy page, adjusting the font and background colours to match the design specifications. These changes enhanced the overall user experience, making the interface more accessible and aesthetically consistent. My contributions helped ensure the website's front-end elements aligned with the project's design goals and user expectations.</p>
HOANG DUY VU	222461495	<p>During this project, I resolved bugs on the website to enhance functionality and user experience. I implemented a fresh design for the licensing, statistics, use case, header, and footer pages, aligning them with the latest UI designs. Additionally, I added new functionalities to the home, statistics, and use case pages, improving their interactivity and user engagement. To ensure accessibility across all devices, I made the header, footer, licensing, statistics, and use case pages fully responsive. On the backend, I optimized the Continuous Integration and Continuous Deployment (CI/CD) pipeline by implementing various stages, streamlining the deployment process. Furthermore, I integrated Google Cloud Platform (GCP) into the pipeline to improve scalability and cloud-based operations.</p>
ADRIAN THILINA WEERASINGHE	222481445	<p>I created a framework for weekly meetings, updated the team's onboarding checklist and added new members to the team channel and migrated tasks from Trello to Planner. I helped onboard junior members, I hosted meetings in the first two weeks, created and presented slides during the client meeting. I provided accurate</p>

		pricing calculations for GCP resources. I added 35 new tasks to Planner. I supported juniors with their queries and reviewed pull requests, MongoDB was connected successfully. Vercel was setup for automated deployment, live previews. Syntax errors for sign-up page and privacy page were fixed, added stages to pipeline. I updated the cypress config files, created test case for the chatbot, and added features to the chatbot, like multi-intent, invalid input, and empty input handling, and integrated NLP. Started working on 11.2P documentation, created two walkthrough videos of the website, created and presented WebDev slides for the 2nd client meeting.
NIPUN UDARA YAHATHUGODA BADALGE	223456323	I have participated weekly standups and share my updates as well as raise any doubts or issues arise for me and get clarified with the help from the seniors in the team. That helps me a lot to clear and blockings and plain my task ahead. I was assigned the task retrieving statistics from db and displaying them on the statistics page. I implement backend part of the task by adding new api to get statistics data from mongodb. Also added a test case to verify the functionality. Then i update the statistics page front end to use the newly added statistics data end point instead of the hardcoded data available. I created well-documented pull requests and consistently unskilled in React and Mongodb to enhance my contributions to the project.
AKSHIT SANJAY KAWA	223741844	During this project, I designed the wireframe for the Sign up page. I designed the light mode of the Sign up page. I designed the Dark mode of the Sign up page. Also, the mobile view design for the Sign Up page. Contributed for the documentation of the same. Revised all the above one by one according to the new design requirements. Created pull requests on Github for all the tasks assigned. Attend weekly standups of the team and sub-team throughout. Upgraded Figma and GitHub skills
ARMAN BAKHTIARIASL	220492498	During this project, I worked with the MOP-WEBDEV team on Terraform. I participated in weekly meetings, collaborating with team members and leaders. My main focus was on documenting Infrastructure as Code (IaC) using Terraform. I successfully deployed a container on Azure with Terraform and created a detailed step-by-step guide for the process. Subsequently, I expanded this documentation by deploying an instance on Google Cloud Platform (GCP) and wrote a comprehensive guide on how to deploy an instance in GCP with Terraform. Additionally, I hosted a team meeting and

		volunteered to assist the team leader with various tasks, such as reminding team members to fill out the contribution sheet. I also volunteered to be a team leader for Project B in the next trimester.
HARRISON TIERNEY	221190865	<p>I have participated in this unit by creating two features that are to be used in the application. This was completed through Figma for the frontend where I designed each page before moving to React/JS for the backend coding and dynamic functions.</p> <p>The Mepage, to display user details, including personal vehicles and later, a rewards system. The other being a Payment Gateway (PaymentDetails) that provided a platform to place payment details into the app that can be charged when recharging at supported charging stations. This also acts to serve as a place to connect other accounts to better manage users EV's.</p> <p>I have taken on feedback and actively worked to change certain areas of both pages and commit them to the repository.</p>

EV Adoption Tools

Overview

The EV Adoption Tools project was initiated with the objective of promoting the widespread adoption of Electric Vehicles (EVs) in Australia. By leveraging innovative tools and strategies, the project seeks to address key barriers to EV adoption, thereby contributing to a reduction in fossil fuel dependency, mitigation of greenhouse gas emissions, and fostering a positive environmental impact on both local and global scales.

Goals & Objectives

One critical factor that affects EV adoption is EV charging infrastructure. EV charger Location, availability and charging speed are key EV charger attributes that impact the user experience and can be a barrier to adoption. Tools to support users navigate and utilise the EV charging network are critical to improve user adoption. At Chameleon the EV Adoption Tools team is focused on developing a mobile App that can provide users with:

- Visibility and information on EV chargers based on current location.
- Route navigation services through the EV charging network.
- User configurable parameters that include EV characteristics (battery size, range) and personal preferences (food preferences, services etc)

To support the mobile app a team of data science team members are continuously enhancing the above applications and researching additional EV related applications. These applications will be available on the EV Adoption Tools website.

Aims this Trimester

In this trimester the EVAT will migrate all task management from 2 Trello boards to a single EVAT MS Planner board. The App / Web team will complete a rebuild of the mobile App. In previous trimesters project teams have been unsuccessful in restoring the mobile app functionality and as such a decision has been made to rebuild the mobile app.

The critical functionality to be implemented on the mobile app include map-based location services where a user can identify and navigate to an EV charger that meets the user requirements. The mobile app will also be able to provide full point to point navigation services from any starting and ending location in mainland Australia.

The data science team will optimise and enhance the code required to calculate routes throughout the EV charger network. The data science team has grown significantly in this trimester and as such the team will research and assess future use cases for consideration with the product owner.

Finally, the website will be updated to include data science research and use cases. Infrastructure works will be completed such that the website can be hosted on appropriate hosting services and there made available for team members to interact with.

Trimester Deliverables

App / Web Development Team:

- Rebuild the mobile app on an appropriate technical platform.
- Implement user configurable details such as vehicle type and user preferences for charging costs, speed and nearby amenities.
- Implement map navigation services that include nearest charger, nearest charger based on user parameters and point to point navigation services.
- Website infrastructure updates to ensure website is hosted and available for browsing.
- Updates to website to include data science research and use cases.

Data Science Team:

- Optimise data collection for EV charger location data and make available for display on the mobile app.
- Optimise data collection for EV charger amenities data and make available for display on the mobile app.
- Develop data collection for EV characteristics and make available for selection on the mobile app.
- Optimise route navigation services and make available for execution on the mobile app.
- Research and assess additional data science EV use cases.

Mid-Term Project Update

Mobile App Development Team:

- **Project Overview:** Upon conducting a SWOT analysis and a skillset assessment, it was identified that the team had limited technical skills in areas such as React Native and Figma. To address this, the team dedicated the first 2-3 weeks to upskilling themselves in these tools, ensuring they were proficient and comfortable using them.
- **Sprint 1:** Once the team was adept with Figma, we commenced the first sprint, focusing on the initial phase of the design process for the EVAT application. This phase included the creation of the app's logo, landing page, sign-in/sign-up page, 'add

vehicle' page, and the 'me' page. These pages underwent several iterations to refine the designs. By the end of first half of Sprint 1, we successfully completed the first phase.

- Sprint 2: In the second half of Sprint 1, Sonam facilitated cross-collaboration between the frontend and design teams to ensure the frontend team fully understood the logic behind the designs. One-on-one meetings were held to foster this understanding. Concurrently, we initiated the second phase of the design process, which included the home/map page, trip planner, save page, and further iterations of the 'me' page.
- **Backend Development:** During this period, Sonam provided API keys and playground code, and allocated full sprint tasks to the backend lead to ensure consistency and cross-functionality. A significant milestone was the assignment of a task to a backend member to harness the Gemini API. This feature will enable users to use voice commands and navigate to various stations hands-free.
- **Current Focus:** Currently, Sprint 2 is primarily focused on the frontend coding of the designs created by the design team, the map Integration in the homepage, secure login and signup (MongoDB) and harnessing Gemini.ai with the Trip planner page. We are also reviewing and iterating on the nutshell pages being pushed to the GitHub repository ensuring they meet design requirements. The navigation bar of the app is now ready and will serve as a template for all frontend developers working on the inner core of the application. Dynamic routing has been applied to the navigation bar to facilitate seamless integration.

Data Science Team:

The following system improvements/changes were implemented:

- Migration from Trello to MS Planner as the project management tool
 - 72 Tasks Completed, 36 Tasks remain in Backlog
- 9 Additional use cases presented in Meeting #1 with Product Owner.
- New EVAT DS GitHub Repo created.
- Systems Integration Architecture and requirements specification developed to align mobile App development and data science use case development.
- System Test Documentation developed
- Data Science SharePoint Page created with dedicated project page for each use case / analysis completed

The following functions were developed

- Python function to identify the nearest EV charger given a current location developed.
- Python function to plot a route on a map developed.

The following PowerBI Reports were developed and published to the PowerBI EV Adoption Tools Workspace:

- [Charger data visualisations](#)
- [EV Chargers Time Series \(Australia 2014-2024\)](#)

The following analysis were completed and documented on [sharepoint](#)

- [EV Adoption Trend \(2011-2023\)](#)
- [Data-Driven Economic Impact Analysis and Visualization for Sustainable EV Adoption](#)
- [EV Charger Installation Time Series Analysis \(2014-2024\) and forecast to 2030](#)
- [Machine Learning Clustering for Charging Stations](#)

T2 EV Adoptions Tools video summary:

EVAT Project Members:

App / Web Development Team

Student Name	Student ID	Semester Contributions
SONAM CHEWANG DORJI	222575318	<p>I successfully implemented Agile methodology, conducted a SWOT analysis, and assigned tasks. Completed wireframing for key app pages & facilitated cross-collaboration between UX/UI designers and frontend developers. I managed tasks through MS Planner, ensuring all team members were engaged. Active Contribution and Team Leadership Led the UX/UI and frontend teams designed the 'add vehicle page,' and created the GitHub repository with comprehensive documentation. I hosted meetings to ensure alignment and encouraged collaboration to meet project milestones.</p> <p>Overseeing Frontend Development In Sprint 2, I focused on frontend coding, created a low-fidelity prototype, & iterated designs to meet product requirements. Each team member was assigned familiar components to ensure efficient development. Technical Contribution I implemented dynamic routing, integrated Google Maps SDK, and developed geolocation features. Managed Planner for task validation and spent significant time learning API calls and Google Maps services.</p> <p>These achievements highlight my contributions to project management, technical development, & team collaboration.</p>

THENUSAN SANTHIRAKUMAR	223228828	As a junior leader in the EVAT Web/App team, I played a pivotal role in both technical and leadership capacities throughout the project. I successfully developed and redesigned the Sign-Up and Sign-In pages, ensuring seamless integration with the backend system while addressing user requirements and design issues. My efforts extended to testing and validating the functionality of user login and sign-up processes, enhancing the user experience. In addition to my technical contributions, I actively reviewed Git pull requests, ensuring code quality and guiding team members in best practices for version control. I also mentored junior developers, providing technical guidance and fostering a collaborative team environment. Through regular check-ins and effective communication, I ensured alignment with project goals and kept the team on track. My contributions strengthened the project's progress, improved team cohesion, and demonstrated my ability to lead and deliver high-quality technical solutions.
ESWAR SIVAN SETHU	223566161	As a junior team lead, I collaborated with a teammate to design the sign-in and sign-up pages in Figma. We conducted regular meetings to discuss our progress and kept our mentor updated throughout the project. Together, we created the Add Vehicle Page and pushed it to the Git repository. Additionally, I contributed to the development of the save page and favourites page in React Native, working on them alongside other tasks. My involvement helped ensure steady progress on the app's key features while maintaining communication and coordination with my team.
MITCHELL BARRY DAY	220059702	Throughout this trimester I have been involved with multiple aspects of the project. These include: <ul style="list-style-type: none"> - Weekly Mentor and EVAT meetings. - Creating Python code for finding amenities - Developing backend NodeJS with ExpressJS including ability to serve static React App and API Endpoints - Started development capability to convert voice to text, get origin and destination from a sentence for route/trip data using google AI. - Work with Data Science team member Goutham and backend member Shubh for Python integration into NodeJS including spawning python processes and retrieving data - Develop GoogleMaps API simultaneously for retrieving places. - Work with App integration team to define functionality for each component of EVAT (Frontend, Backend, Data Science). - Create dockerfile, containerised applications and hosted on private Azure docker service using portainer, nginx proxy

		manager and godaddy DNS.
Thilina P Fonseka	222177696	
HEMAKSH KATAL	224236435	My contributions: I attended the lecture meetings as well as mentor meetings to update my task of the landing page. I had extended discussions with the UI team member who designed the landing page about the frontend design of the same. I updated the UI team member and the junior leader about the frontend designs of my page and made changes/updates for the landing page according to the instructions given by them. I also discussed the issues and complications that my page was facing regarding the gradle and bundler which were necessary to run the page and asked for corrective measures. After testing my page using USB debugging of real android handset, I made pull request for the same to the EVAT repository. During this I also learned to work on figma designs and perform operations such as tagging layers rearranging and drawing elements

FANGZHOU JIA	222305846	<p>Here are my contributions In this trimester: attended weekly meetings and mentor meetings for reporting my tasks progress and explained the challenges I met. redesigned UI of 'Landing page' of mobile applications, redesigned UI of 'Map filter' of mobile applications, timely update my tasks progress and adding descriptions on MS planner, worked with patner to do the front end development of 'Landing page', worked with patner to do the front end development of 'Mapfilter', sent the pull requests timely to the githubs, actively participated into group activities on Teams and on track such as 6.1p collecting evidences of contributions. helped other team members to solve their technical questions sometimes, filled Stand ups files weekly to show my current working progress. Posts work I've done and asking feedback in Teams. set up react web/native development environments for the front-end developments, rework and improved UI design and codes for front developments.</p>
HONGKUN MU	220427276	<p>During this semester, I made significant contributions to our project, focusing on the design and development of the Map/Home page using JavaScript and React. I successfully integrated the map functionalities with backend data, ensuring seamless interaction between the frontend and backend. I also collaborated closely with the team, participating in discussions to refine the user experience and resolve technical issues. In addition, I tackled project environment challenges, ensuring that the project ran smoothly for all team members. I actively contributed to code testing, debugging, and version control through Git, maintaining the quality of the codebase. Overall, my work helped ensure the project's success.</p>
ADRIAN THOMAS THAUS	222275741	<p>Weeks 1 to 4 I have familiarised myself with various company and team pages. In preparation for Web/App tasks, I have reviewed preexisting company resources and upskilled in Figma and React Native for design and frontend. Weeks 5 to 7 I had designed the trip planner page UI, experimenting with theme styles, seeking and fulfilling feedback, and reaching out to other team members to discuss the backend requirements. I had begun frontend of this page by tagging most elements but later requested help to declare the location points as an item in a list component. Weeks 8 to 10 I reached out to assist on the frontend for the add vehicle page, creating a fix for the suggestion's dropdown. I created a proper pull request for the current state of the trip planner page and added a commit for my fix to the preexisting add vehicle page request.</p>

HARRISON TIERNEY	221190865	<p>I have participated in this unit by creating two features that are to be used in the application. This was completed through Figma for the frontend where I designed each page before moving to React/JS for the backend coding and dynamic functions.</p> <p>The Mepage, to display user details, including personal vehicles and later, a rewards system. The other being a Payment Gateway (PaymentDetails) that provided a platform to place payment details into the app that can be charged when recharging at supported charging stations. This also acts to serve as a place to connect other accounts to better manage users EV's.</p> <p>I have taken on feedback and actively worked to change certain areas of both pages and commit them to the repository.</p>
NISHITHA DAYANANDA	223618809	<p>For my contribution, I focused primarily on the frontend development of the "Charging Station Details" page. I worked on key features such as enabling users to check in at charging stations, view plug availability, and explore nearby amenities like dining, restrooms, and shopping. My goal was to create an intuitive and user-friendly interface that enhances the overall user experience. Throughout the project, I collaborated closely with my teammate Rahul to ensure that my frontend work integrated seamlessly with the rest of the application. I consistently submitted pull requests on GitHub, ensuring that my contributions, such as the check-in functionality and plug status updates, were reviewed and merged in a timely manner. I attended weekly team meetings and mentor sessions, providing updates on my progress and addressing challenges as they arose.</p>
RAHUL SEHRAWAT	222465258	<p>I mostly worked on frontend and webpage designing for my semester work for the company. I mainly focused and build 2 pages from scratch with help of my teammates by setting up the environment first and then doing a regular meeting with them to keep them updated and myself about all the work that was being done and what we still need to do. I also took the mentor meetings regularly and kept my team lead and seniors leads up to date on my progress. We did our git commits and pull request to get our code reviewed to get some feedback on what was missing which helped in making the webpages a lot better than the intial phase. All our work submitted in timely manner and constant feedback was always kept as a check on our work. I did face several setbacks which I have rectified and still rectifying</p>

SHUBH UNIYAL	223531994	<p>I developed a MongoDB wrapper class crucial for our server's architecture, ensuring efficient connection management and robust data handling for enhanced application maintainability and scalability. I created a Node.js service that integrates MongoDB, KMeans clustering, and the Overpass API to optimize the functionality of electric vehicle charging stations. This service improves query response times by clustering stations geographically and enriches station data with nearby amenities. I also implemented RESTful API routes for advanced data retrieval and filtering. Furthermore, I presented this work and discussed future backend improvements with the product owner using detailed diagrams, ensuring alignment with our goals for a reliable and user-friendly application. Moreover, I regularly participated in mentor meetings, showcasing ongoing progress and collaboratively overcoming technical challenges by maintaining continuous communication with team members. These efforts ensured our application not only meets high standards of functionality but also adheres to our objectives of reliability, scalability, and user-friendliness.</p>
YUHUA ZHAO	221209335	<p>I attend weekly meetings and mentor sessions to provide updates on my task progress and explain the challenges I encounter along the way. My responsibilities include designing the UI for the mobile application's "Home" page and redesigning the "Navigation Bar" to improve user experience. I make modifications to the UI based on feedback received from team members and stakeholders. I ensure that I update my task progress in a timely manner on MS Planner, adding detailed descriptions for each task. I work closely with my partners on the front-end development of the "Home" page, fixing bugs and resolving errors as they come up. Additionally, I submit pull requests to GitHub promptly to keep the project moving forward. I actively participate in group activities on Microsoft Teams, maintaining alignment with the project's plan and ensuring smooth collaboration across the team.</p>

MUKUL KAMALKANT SINGH	222296609	I was the senior leader for the EVAT App team project. During the trimester my key focus was to align the App and Data Science team such that a working prototype was delivered this trimester. Whilst we were able to present aspects of the mobile app during our 3rd product owner meeting, we did not achieve the full outcome we had hoped to achieve. On a personal level I developed design for the saved and favourites page along with helping fellow team members mentoring. I have also represented Chameleon Company at Events held at multiple venues as Company Representatives.
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Data Science Team

Name	Student ID	Semester Contributions
JAMES DAVIES	218377995	I was the overall leader for the EVAT project and the senior leader for the Data Science team. During the trimester my key focus was to align the App and Data Science team such that a working prototype was delivered this trimester. Whilst we were able to present aspects of the mobile app during our 3rd product owner meeting we did not achieve the full outcome we had hoped to achieved. On a personal level I developed a PowerBI Analysis looking at the construction of EV fast chargers across Australia and 5 comparable countries over the last 10 years. This includes a forecast of the next 10 years. This work and the work of other students is showcased on series of sharepoint pages that I developed the template for.
GOUTHAM KRISHNA BALA MURALI KRISHNA	223282399	This trimester, I made significant technical and leadership contributions to our project. I developed the nearest charging station function using KMeans clustering, optimizing geographic data processing for real-time performance. I also automated the EV dataset batch function, handling data extraction, cleaning, and merging from APIs, which drastically reduced manual effort and ensured consistent data reliability. Additionally, I set up and optimized the MongoDB

		<p>database for scalability, ensuring seamless integration with the app. My Power BI analysis provided key insights into the EV charging stations, helping inform strategic decisions regarding station deployment. As junior lead, I managed the entire sprint process, including task creation and assignment, ensuring clear objectives and deadlines were set. I also facilitated smooth collaboration between development and data science teams, bridging communication gaps and helping align both technical and strategic goals. I showcased all of my work in the SharePoint page for next trimester students.</p>
SHUT KEUNG CHAN	222511405	<p>In terms of technical achievements, I conducted an EV trend analysis by leveraging my data analysis skills and developed an interactive dashboard for advanced data visualisation for entritonmetal impact analysis. Additionally, I successfully developed a Python function dedicated to route plotting, which involved integrating various parameters such as origin name, destination name, max range of vehicle, and battery size. It will return the information of distance, duration, estimated power consumption and EV stations found. On the leadership front, I took on the role of a coordinator within the app team, focusing on improving communication efficiency between the data science team and the app team. Moreover, I engaged in the company's leadership meetings to remain abreast of the progress across different teams, thereby gaining a holistic insight into the company's growth trajectory. Furthermore, I participated in the data science team's leadership meetings, contributing to discussions on project management matters.</p>
JOHN COLLINS	223617689	<p>As a technology leader, I spearheaded application integration efforts across diverse teams—ranging from Data Science to Web and App development. My contributions included creating integration documentation for priority use cases, designing system architectures, defining data flows, and modeling data structures—all with a keen eye on practical implementation. Additionally, I developed a robust test strategy that enhanced reusability and knowledge retention during team</p>

		transitions. This strategy covered everything from linking requirements to testing, understanding the testing lifecycle, and measuring testing effectiveness. Notably, I also crafted a compelling use case for supply and demand modeling of electric vehicle (EV) energy consumption.
NIRMAL ANTONY MARIADOSS	223919703	I have contributed significantly to the company's project by engaging in multiple key tasks. I actively participated in team meetings, where we discussed project progress and addressed challenges to ensure we stayed on track. I mastered GitHub operations and familiarized myself with the project platform through Microsoft Planner, laying a strong foundation for collaboration and workflow management. I gathered and analyzed data on electric vehicles (EVs) in Australia, focusing on charging times, ranges, and sales trends. I developed comprehensive visualizations using Python to illustrate user behavior patterns in EV adoption across various states, identifying key trends and insights. Furthermore, I have developed machine learning models to predict EV sales. This process involves data preprocessing, model development, and performance evaluation to ensure accurate forecasting. By leveraging these models, I aim to identify key patterns and trends in historical sales data, which can be translated into actionable forecasts.
HUE MINH NGUYEN	220466717	As the GitHub Coordinator, I established a structured repository for the data science team, along with a comprehensive guide on repository structure and Git processes. I handled technical tasks including setting up the backend using Flask and MongoDB, creating a Python function to calculate battery consumption for trips, developing APIs to manage favorites and retrieve the nearest charging station and get nearest station based on user's location, and setting up the backend using Flask and MongoDB. I also transitioned the database to MongoDB Atlas and deployed the application using Docker and AWS. Additionally, I implemented a CI/CD pipeline with GitHub Actions for seamless integration and continuous deployment. I participated in leadership meetings, hosted meetings with mentor in Weeks 6 and 8, and collaborated with

		the App Integration Team to align data science work with the web team's efforts.
BARANI SHANMUGASUNDARAM	223768076	In the EV adoption project, my focus was on completing the Economic Impact Analysis with a strong emphasis on data visualization. Using the Kaggle Air Index dataset, I conducted an in-depth Exploratory Data Analysis (EDA) to identify key trends related to cost savings, environmental benefits, and long-term returns on investment associated with EV adoption. I presented the findings to stakeholders during a team meeting, gathering feedback that helped refine the visualizations to ensure they were both clear and actionable. I also collaborated closely with teammates to resolve challenges in data interpretation and presentation, offering specific guidance to Nirmal Antony Mariadoss on visualization techniques for his sprint tasks. My contributions advanced the project's goal of delivering data-driven insights on the economic and environmental impacts of EVs.
ADITYA GAHLOT	222093645	So far in the EVAT project, I have contributed by integrating traffic data for electric vehicle (EV) route optimization using the TomTom Traffic API and OpenChargeMap API. This involved fetching real-time traffic data and visualizing it on a map using Folium, where I implemented a color-coded system to represent traffic congestion. I also conducted an economic impact analysis, comparing fuel costs of traditional vehicles with the charging costs of EVs, providing key insights into the long-term cost-effectiveness of electric vehicles. In addition, I created detailed visualizations using Matplotlib, showcasing key metrics such as EV range, efficiency, price distribution, and correlations between variables. I collaborated with a team member on the "Forecast EV Adoption" task by supplying datasets and guidance for model development. Lastly, I reviewed and approved several GitHub pull requests, ensuring code quality and alignment with project goals. These contributions have helped drive both technical progress and data analysis in the project.
NOUMAN ALI	223101742	In the EV adoption project, I contributed as Data Scientist. My main focus was to gather and analyse the data to provide actionable insights.

		<p>Initially, I used the Open Charge Map API to gather critical data about EV charging stations across Australia, focusing on usage costs and station-specific information. This data was then cleaned and processed for further analysis. During the second sprint, I conducted a comprehensive cost analysis, comparing EV charging prices across all states in Australia. I also performed an analysis of electricity consumption for each state, visualizing trends over time. I created multiple pull request, which was reviewed and approved by team leader.</p> <p>I worked effectively as part of a team, learning to collaborate using tools like GitHub for continuous integration and Microsoft Planner for task management. For the regular updates we use Microsoft Teams. Working in a project enhanced my both techincal and soft skills.</p>
WENJIE LI	220452853	<p>This semester, I contributed to various projects, with a particular focus on the map filter page. I worked closely with the team to design and implement the map filter functionality, ensuring a smooth user experience. I was responsible for translating the map filter design into front-end code and successfully integrating it into the project through pull requests. In addition, I developed the network and country drop-down features, which enhanced the usability of the map filter. Throughout the semester, I actively participated in team discussions and worked on debugging and improving the functionality to meet the project standards.</p>
EBI BENNY	223645405	<p>As a data science team member on the EV Adoption Tool project, I contributed significantly to the navigation function, which calculates the most efficient route for electric vehicles based on starting range, maximum range, buffer range, and available charging stations. My key responsibility was developing this Python-based function, which was successfully integrated into the system after passing the review process. Additionally, I integrated real-time traffic data into the navigation tool, allowing users to receive dynamic route suggestions based on current traffic conditions, thereby improving accuracy and reliability, especially in urban areas. This task</p>

		<p>involved researching suitable APIs and incorporating live data into the algorithm. Throughout the project, I maintained effective collaboration by regularly updating my mentor and team lead via MS Teams and adapting my work based on feedback from code reviews. Continuous upskilling in Python and real-time data handling was crucial to delivering these high-quality solutions.</p>
JASKARANVIR SINGH	223502544	<p>I created a detailed dataset for EV charging stations across Australia, including key columns such as station ID, recent verification status, operator references, usage cost, number of charging points, date created, data provider website and title, operator information, and the availability of membership or access requirements. It also contains geographic details like latitude, longitude, and postal code, allowing for location-based analysis. Additionally, I incorporated technical details of the charging points, such as amperage, voltage, power capacity (in kW), and the types of connections (e.g., IEC 62196-3) available. The dataset also tracks whether the station is operational and user-selectable, with clear distinctions between fast charging and regular charging levels. I structured this data to provide an accurate snapshot of the EV charging network nationwide. It is invaluable for stakeholders such as policymakers, EV operators, and infrastructure planners, enabling them to make data-driven decisions to expand and improve the national EV infrastructure.</p>
ROSE MARY JOY	223519971	<p>In Sprint 1 and 2, I contributed to the EV Adoption Tools project by completing two key tasks. First, I developed a Python function to calculate the time required to stop at an EV charger, considering battery capacity and charger efficiency. After collaborating with team members, I refined the function based on their feedback and improved its accuracy. The final version, along with relevant datasets, was pushed to the project's GitHub repository for integration.</p> <p>Second, I used the "Global EV Sales: 2010-2024" dataset to develop a simplified ARIMA model (1,1,0) for forecasting EV adoption rates. I further explored advanced models, such as Complex ARIMA and SARIMA, for deeper insights.</p>

		Following reviewer feedback, I updated the code and included Auto ARIMA to improve the forecasting accuracy. I regularly attended team meetings, provided weekly updates to the mentor, and actively participated in discussions to ensure the project's goals were met.
SURAJ RADHAKRISHNAN NAIR	223606797	I attended weekly and mentor meetings to report on my assignment progress and discuss the problems I encountered. So far in this project i have collaborated with team members and worked on two tasks. You spearheaded the enhancement of the 'Nearest EV Station Locator' feature by integrating real-time traffic data. This improvement was aimed at making the locator function more precise by considering current traffic conditions, thereby aiding in quicker and more efficient route planning for EV users. conducted extensive research to identify suitable APIs that provide real-time traffic information. Upon selecting the most appropriate API, you were responsible for integrating this data into the existing system to update the nearest station algorithm. After updating the algorithm, tested the modified feature under various scenarios to ensure reliability and accuracy. This testing phase was crucial to validate the enhancements made to the tool.
HAROLD PARAPPILLIL SUNNY	223692571	For the Electric Vehicle (EV) Adoption Tools project, I contributed by completing two key tasks. First, I developed a Python function to calculate the time required to stop at an EV charger. This function helps EV users plan their charging stops by accounting for battery capacity, charger efficiency, and other critical factors. Second, I worked on the integration of real-time traffic data for the Nearest EV Station locator feature, which improves route optimization for EV drivers. Throughout the project, I regularly updated my progress during weekly meetings and collaborated closely with my team members to refine the features. These tasks were critical in enhancing the overall functionality of the EV Adoption Tools, providing more accurate and user-friendly solutions for EV drivers.
AJAY RAJESH	220167815	During the project, I successfully contributed to key areas such as the development of a Python

		<p>function for route optimization, incorporating EV charging stops, and utilizing real-time data to enhance route calculations. I developed visualizations for the environmental impact analysis, enhancing the clarity and effectiveness of data presentations for stakeholders.</p> <p>Additionally, I improved the existing function to find the nearest EV charging station by integrating real-time traffic data, which increased the accuracy of the results by considering current traffic conditions. This ensured users were directed to the most convenient charging station. I attended regular team meetings, collaborated with peers, and actively contributed to discussions on algorithm optimization and user behavior analysis. Overall, I took responsibility for both individual and collaborative tasks, ensuring timely and effective contributions to the project's success.</p>
YULIN ZHUANG	223665607	<p>Technical level:</p> <ul style="list-style-type: none"> - Collected 60,000 electric vehicle charging data and completed data sorting (data set integration, data format unification, missing value processing, integrity check) - Used Plotly library and Dash dashboard to realize interactive visualization dashboard, enriched the visual form of data analysis, and used car charging period data, charging data, and charging pile usage frequency to complete histograms, pie charts, heat maps, and line charts to display data more vividly and intuitively, allowing for deeper understanding and more customizable analysis. - Retrieved the latitude and longitude coordinates of the charging station location through Google Maps API, saved the coordinates into the data set and integrated into the Dash dashboard, then use Plotly scatter_mapbox to realize interactive visualization map charts <p>Team contribution level:</p> <ul style="list-style-type: none"> - Participated in project meetings on time every week and reported the progress of the project that week. Updated project progress and stage summaries in MS Planner and stand-up documents on time.

KA HO SAMUEL NG	222518061	<p>I contributed to gathering datasets on available electric vehicles (EVs) in Australia and the United States, as well as electricity prices in Victoria. Additionally, I developed a tool that allows users to select an EV model and an electricity provider, then input the start and end locations along with a radius for the destination. The tool provides various insights, including the selected EV model, battery capacity, estimated driving time, distance, energy consumption per kilometre, total energy consumption for the route, battery usage percentage, total trip cost, and a mapped route. It also displays nearby EV charging stations at the destination.</p>
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