Sri Lanka Institute of Information Technology

B.Sc (Hons) Information Technology Specialized in Software Engineering

Research Project - IT4010



De Silva A.S. – IT20166038

LOG-BOOK

DECLARATION

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

Name	Student ID	Signature
De Silva A.S	IT20166038	Market Comment

Signature of the Supervisor	Date
(Dr. Darshana Kasthurirathna)	
	30/10/2023
Signature of the Co-Supervisor (Dr. Samantha Rajapaksha)	Date
	30/10/2023

Table of Contents

Contents

DE	CLARATION	2
1.	MONTHLY PROGRESS	4
2.	ALL REPOSITORIES	19
3.	SCREENSHOTS OF THE SUPERVISOR AND CO SUPERVISOR GROUP MESSAGES – WHATSAPP	20
4.	MOBILE APPLICATION COMMITS	2
5.	JIRA BOARD	23
6.	GANTT CHART	2
7.	MEETINGS AND CONVERSATIONS	20
8.	RESEARCH PAPER ACCEPTANCE LETTERS	3′

1. MONTHLY PROGRESS

December (2022)	
DATE	DETAILS AND NOTES OF WORK CARRIED OUT, PROBLEMS ENCOUNTERED AND HOW SOLVED ETC.
Week 01	 Started to find a group and a supervisor and co supervisor. Research topic discussion with Dr. Darshana Kasturirathna. (Initial pitch) Introduced team to supervisor. Discussion of topics with supervisor. Supervisor requested in detail on the selected topic at the next session. Prepared a draft proposal report regarding the research idea. Created a WhatsApp group including supervisor. Finding a co supervisor. Discussing the research topics with the co-supervisor. Prepared the presentation. Referred necessary resources. Initial presentation to the supervisor Critically analyzed the pros and cons of the topic and the presentation. Referred some research papers on similar field to get an idea on the context and the technologies used
Week 02	 Referred to some research papers on similar field to get an idea on the context and the technologies used.
Week 03	Referring about some more topics with our supervisor.
Week 04	Research Project weekly meeting and presentation.

January (2023)	
DATE	DETAILS AND NOTES OF WORK CARRIED OUT, PROBLEMS ENCOUNTERED AND HOW SOLVED ETC.
Week 01	We presented our research questions, main research objectives, sub objectives and component division. Initial meeting with external supervisor Dr. (Ms.)Janaki, (Dean Gampaha Wikramarachchi Ayurvedic university of Sri Lanka) Worked on further studies of the selected topics. • Divided the components among four team members. • Worked on further studies of symptoms and their design patterns. • A background study was done about cutting-edge technologies that can use for solving our problems.
Week 02	 Designed initial High Level Architectural Diagram for a selected topic with our supervisor. Designed ER Diagram RP group meeting. RP group meeting where we discussed progress up to now, progress of the task breakdown structure, topic assessment form and tentative timeline. Discussed existing problems with supervisor. High Level Architectural Diagram redesigned.
Week 03	 High Level Architectural Diagram redesigned. Meeting our external co supervisor for doubt clearance discussion.

Week 04	 Group registrations were submitted. Updated supervisor on the progress of the topic evaluation. Worked on the topic assessment form. Supervisor shared a folder to upload our topic assessment form.

February (2023)	
DATE	DETAILS AND NOTES OF WORK CARRIED OUT, PROBLEMS ENCOUNTERED AND HOW SOLVED ETC.
Week 01	Worked on the topic assessment form
Week 02	Worked on the Gannt Chart
Week 03	 Feedback was given by the supervisor regarding the Gannt Chart Comments were given by the supervisor to the topic assessment form. Supervisor group meeting to discuss the feedback given. Refined the topic assessment form as per the comments given.
Week 04	 Refined the topic assessment form as per the comments given. Had a discussion with my co-supervisor to clarify some concerns regarding individual scopes. Final confirmation was given to the topic assessment form by the supervisor. Researched about existing systems and lit review.

	March (2023)	
DATE	DETAILS AND NOTES OF WORK CARRIED OUT, PROBLEMS ENCOUNTERED AND HOW SOLVED ETC.	
Week 01	 Proposal Reports Drafts are started. Progress of the presentation practice. 	
Week 02	 Updated supervisor regarding the comments given for the topic assessment form by the panelists. Had a meeting with supervisor. Working on the proposal reports. 	
Week 03	Updated supervisor regarding the progress of the presentation.	
Week 04	 Submitted the project proposal document to CDAP cloud drive. Submitted the approved topic assessment form to CDAP cloud drive. Uploaded draft proposals into the cloud drive. 	

	April (2023)
DATE	DETAILS AND NOTES OF WORK CARRIED OUT, PROBLEMS ENCOUNTERED AND HOW SOLVED ETC.
Week 01	Proposal presentation practice session with group.
Week 02	Proposal presentationRP group meeting
Week 03	 Submitted the proposal presentation to CDAP cloud drive. Field visit to Gampaha Wikramarachchi. Sent all the proposal reports to supervisor to get the Turnitin report.
Week 04	 Submitted the individual project proposals to CDAP cloud drive. Updated supervisor regarding the progress of the implementations. Model training.

	May (2023)
DATE	DETAILS AND NOTES OF WORK CARRIED OUT, PROBLEMS ENCOUNTERED AND HOW SOLVED ETC.
Week 01	Model training.
Week 02	Physical meeting with supervisor.
Week 03	 Second field visit to Gampaha Wickramarachchi. Collected datasets for related components. Discussions about progress and future works. Proposal Markings
Week 04	 Submitted MS teams and GITLAB details to the CDAP cloud drive. Third field visit to Gampaha Wikramarachchi to collect datasets. Updated supervisor regarding the progress of individual components.

	June (2023)	
DATE	DETAILS AND NOTES OF WORK CARRIED OUT, PROBLEMS ENCOUNTERED AND HOW SOLVED ETC.	
Week 01	 Trained a model using transfer learning for the first time (Testing purpose). Tried with CNN and RASA technique. Convolutional Neural Network – VGG19 Test data augmentation using Google Collab separately. Tried on the fly augmentation. But I realized that's not going to work for my scenario. Then I moved to other augmentation techniques. First, I was tried out test data augmentation for single class images. Test data augmentation for single class using Google Colab separately. 	
Week 02	 Meet with the co-supervisor to discuss the progress of the research component. We were guided to work with the Overleaf application, which can be used to write research papers, and we were asked to start work on individual research papers. Meet with the group members to discuss the overall implementation's service architecture, user interfaces, and user experience. Meet with the co-supervisor to discuss the progress of the research component and research paper writing progress. Meet with the co-supervisor to discuss the progress of the research component and research paper writing progress. Meet with the group members to finalize the overall implementation's service architecture, user interfaces, and user experience. 	

Week 03	 Trained a model using VGG19. Considering the image quality, I was selected different sizes to choose a better dimension to convert. Therefore, I used (250,250), (750,750), (150,150), (450,450) sizes. From this selection, 150x150 and 250x250 sizes gave low quality images and 750x750 and 450x450 gave quality images. Converted image size in to 250 dimensions. Used CNN Needed high computational power to train high quality images. Algorithm – VGG19 Image size – 250*250 Epochs – 50Results Changed image sizes into 250x250 Trained a model using VGG16 architecture with the image size of 250 dimensions. RP group meeting.
	 Meet with the co-supervisor to discuss the progress of the research component and research paper writing progress.
Week 04	 Tried out image pre-processing technique before training a new model. Trained a model after applying preprocessing technique. Tried out another augmentation method which was augmented class by class. and saved it in local storage. Preprocessed images. Preprocessed images without using normalization. Resized image in to 300 dimensions. Meet with the group members to finalize the overall implementation's service architecture, user interfaces, and user experience.

	July (2023)
DATE	DETAILS AND NOTES OF WORK CARRIED OUT, PROBLEMS ENCOUNTERED AND HOW SOLVED ETC.
Week 01	 Finalized VGG19 File Meet with the co-supervisor to discuss the progress of the research component and research paper writing progress. Our presented research papers showed some minor issues that can be enhanced. Augmented small set of datasets without using normalization. (Dataset size = 3201) Preprocessed images without normalization and resized images into 300 dimensions. Trained a model using InceptionV3 architecture with the image size of 300 dimensions. (Epochs = 20, T4) Trained a model using VGG19 architecture.
Week 02	 Draw boundary boxes for images Coconut leaf detection using custom VGG19 model Starting to do the auto machine learning part. Draw boundary boxes for leaf images. Image testing Save model weights separately. RP group meeting with the demo of the project. Meet with the co-supervisor to discuss the progress of the research component and research paper writing progress.
Week 03	 Update auto machine learning models- testing Meet with the group members to discuss finished common implementations, which are user service and mobile app home page, and fix some raised issues.
Week 04	 Update auto machine learning models- testing Added a feature map to visualize the feature extraction.

	Week 05	 Mobile frontend designing initiation. Plot a confusion matrix. Created a classification report Meet with the co-supervisor to discuss the progress of the research component and research paper writing progress. Meet with the group members to discuss the implementation progress of each component.
--	---------	--

	August (2023)
DATE	DETAILS AND NOTES OF WORK CARRIED OUT, PROBLEMS ENCOUNTERED AND HOW SOLVED ETC.
Week 01	 Meet with the co-supervisor to discuss the progress of the research component and research paper writing progress. Meet with the group members to finalize and submit one of the written research papers for the ICAC conference. Writing Research paper in Overleaf
Week 02	 Started to train separate model for flaccidity Started to train model for coconut leaf identification Submitted the PP1 presentation to CDAP cloud drive. Preprocessed other class images and flaccidity class images. Augmented category of other leaves images. Preprocessed herb leaves images. RP meeting regarding ICAC registration. Trained a model using VGG19 architecture with the image size of 250 dimensions. Hyperparameter tunning and retrain the models.
Week 03	 Trained a model using VGG16 architecture with the image size of 250 dimensions for leaves identification. Hyperparameter tunning and retrain the models. Meet with the supervisor physically to discuss the progress of the research component and combined research paper.

Week 04	
	 We have received an e-mail from our co-supervisor to combine our research components and write a single research paper. We started working on it.
	 Meet with the co-supervisor physically to discuss the progress. of combined and individual research papers.
	 Trained a model using CNN architecture with the image size of 250 dimensions for flaccidity identification.
	 Hyperparameter tunning and retrain the CNN models.
	 Trained a model using VGG16 architecture with the image size of 250 dimensions for flaccidity identification.
	 Hyperparameter tunning and retrain the VGG16 models.
	 Trained a model using VGG19 architecture with the image size of 250 dimensions for flaccidity identification.
	Hyperparameter tunning and retrain the VGG19 models.
Week 05	
	 Trained a model using VGG19 architecture with the image size of 250 dimensions for leaves identification.
	 Hyperparameter tunning and retrain the VGG19 models.
	Feedbacks were given by the supervisor.

	September (2023)
DATE	DETAILS AND NOTES OF WORK CARRIED OUT, PROBLEMS ENCOUNTERED AND HOW SOLVED ETC.
Week 01	 Started working on the research paper. Trained a model using VGG19 architecture with the image size of 250 dimensions for flaccidity identification. Hyperparameter tunning and retrain the VGG19 models. Trained a model using VGG16 architecture with the image size of 250 dimensions for flaccidity identification. Hyperparameter tunning and retrain the VGG19 models. Trained a model using CNN architecture with the image size of 250 dimensions for flaccidity identification. Hyperparameter tunning and retrain the CNN models. PP2 preparations
Week 02	 Trained a model using VGG19 architecture with the image size of 250 dimensions for leaves identification. Used a dataset without augmentation. Hyperparameter tunning and retrain the VGG19 models. RP meeting regarding ICAC. Trained a model using VGG19 architecture with the image size of 250 dimensions for coconut leaves identification. Used a dataset with testing accuracy for identification using VGG19 architecture. PP2 preparations Meet with the co-supervisor to give an update about the project's progress.
Week 03	 Trained a model using VGG16 architecture with the image size of 250 dimensions for leaves identification. Used a dataset with augmentation. Hyperparameter tunning and retrain the VGG16 models. Finalized the identification model. Best architecture for identification model was VGG19. Visualized model performance in confusion matrix for leaf identification. Generated classification reports for leaf identification model. Visualized model performance in confusion matrix for leaf identification. Meet with the co-supervisor to give an update about

	the project's progress
	Meet with the co-supervisor to discuss the final presentation. We were
	asked to make some improvements to the presentation slides
Week 04	
	 Meet with the co-supervisor to give an update about the project's progress.
	 Submitted the final research paper to HINDAWI 2023 with revisions.
	 Submitted the final research paper to CDAP cloud drive.
	 PP2 and research thesis discussion with supervisor.
	The state of the s

	October (2023)
DATE	DETAILS AND NOTES OF WORK CARRIED OUT, PROBLEMS ENCOUNTERED AND HOW SOLVED ETC.
Week 01	 Meet with the co-supervisor to discuss the feedback on the submitted paper to Hindawi Applied Computational Intelligence and Soft Computing journal. We were given guidance to work on the requested changes. Submitted a draft research paper to co-supervisor for evaluations. RP meeting to discuss the feedbacks on the research paper. 19th October 2023 Meet with the co-supervisor to give an update about the project's progress. 26th October 2023 Meet with the co-supervisor to discuss the final presentation. We were asked to make some improvements to the presentation slides.
Week 02	 Meet with the co-supervisor to give an update on the progress of requested changes of the submitted journal paper. Meet with co-supervisor to revise and again submit the paper with requested changes to Hindawi Applied Computational Intelligence and Soft Computing journal. Meet with the co-supervisor to give an update about the project's progress.
	Final Presentation Preparations.

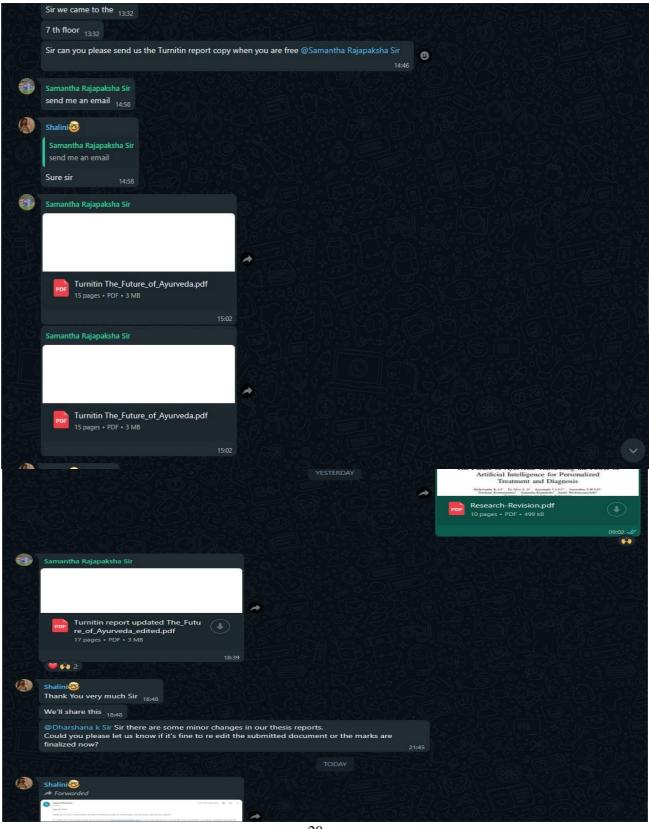
Week 03	
	 Final Presentation Preparations.
	 Meet with the co-supervisor to give an update about the project's
	progress.
	 Testing the Model
	 Deployment of the 4 components.
	UI and Frontend development.
	Backend implementation Finalization.
	Backend implementation i maiization.
Week 04	
	Final Presentation Preparations.
	 Meet with the co-supervisor to give an update about the project's
	progress.
	Testing the Model
	Deployment of the 4 components.
	 UI and Frontend development.
	 Backend implementation Finalization.
	 Testing the model accuracies.

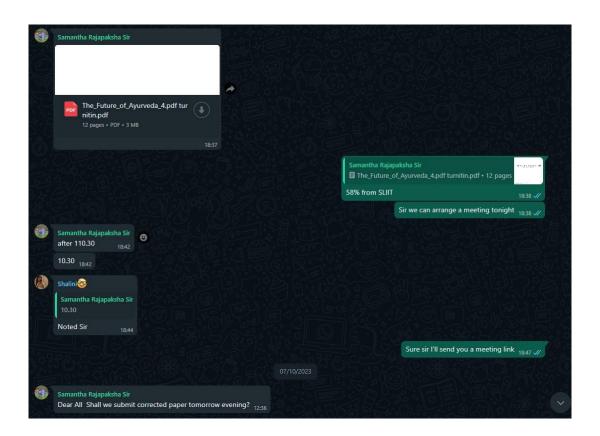
	November (2023)
DATE	DETAILS AND NOTES OF WORK CARRIED OUT, PROBLEMS ENCOUNTERED AND HOW SOLVED ETC.
Week 01	 Final Presentations Got feedback. Uploaded the Presentations to the CDAP. Meetings with Co supervisor Logbook Submission. Poster submission Website Submission ICAC presentations

2. ALL REPOSITORIES

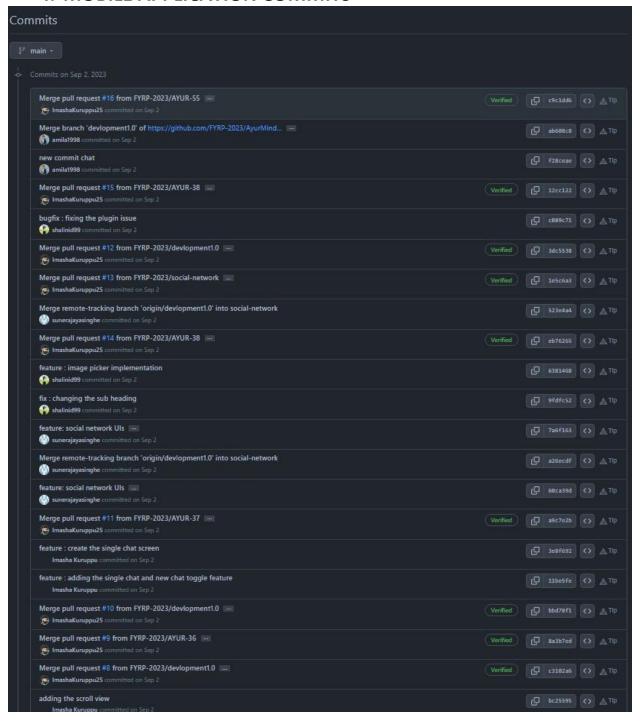


3. SCREENSHOTS OF THE SUPERVISOR AND CO SUPERVISOR GROUP MESSAGES – WHATSAPP

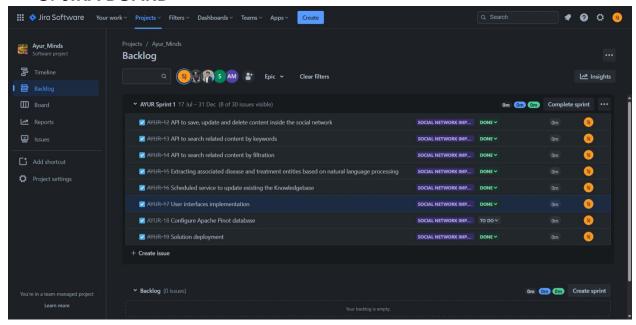


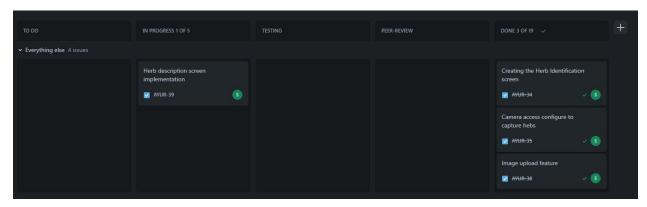


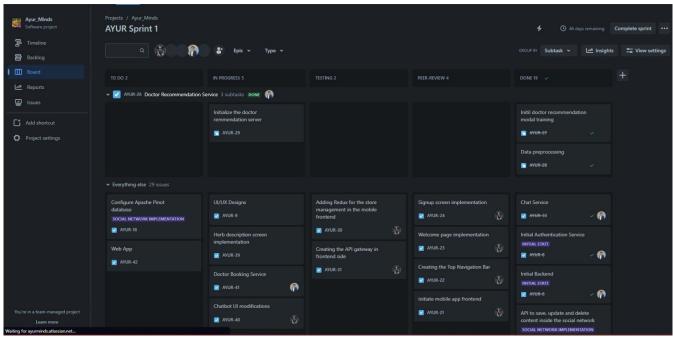
4. MOBILE APPLICATION COMMITS

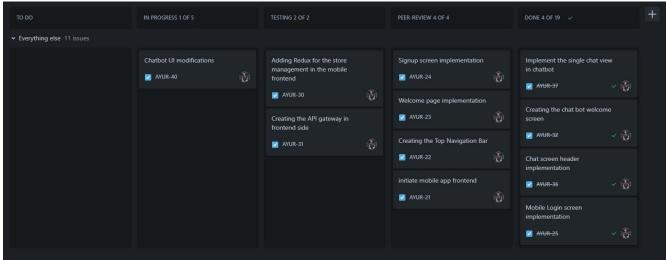


5. JIRA BOARD









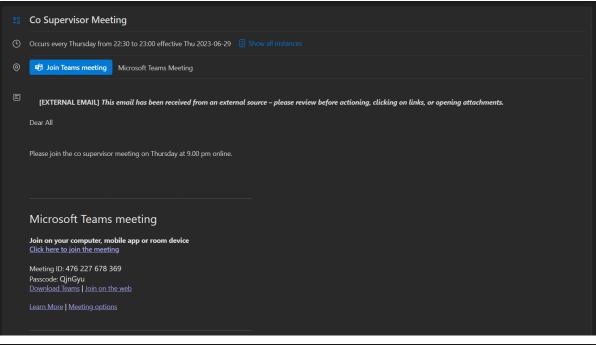
6. GANTT CHART

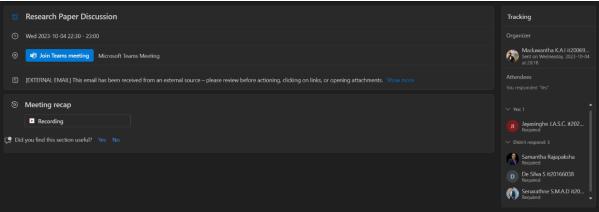
	February	March	April	Мау	June	July	August	September	October
API to save, update and delete content inside the social network									
API to search related content by keywords									
API to search related content by filtration									
Solution to extract related diseases and entities along with their relationships									
Scheduled service to update the existing Knowledge Base									
User interfaces implementation									
Solution deployment									

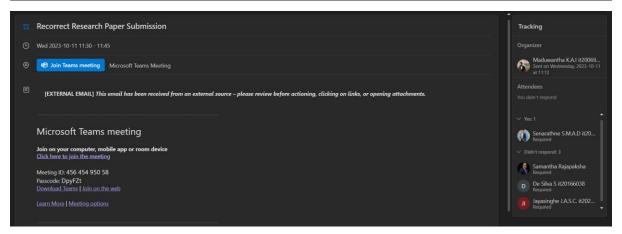
7. MEETINGS AND CONVERSATIONS

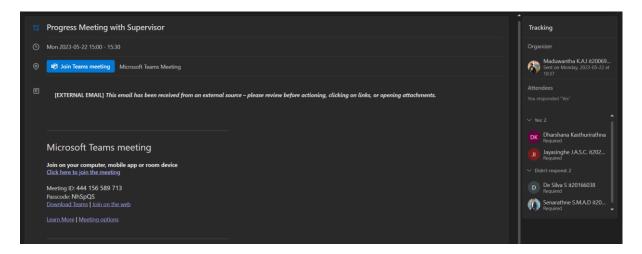
	Samantha Rajapa Workshop at 2.00 pm 7/14/202 Dear Students Please joi Inbox	3 🗊
	Samantha Rajapaksha Pre-Conference works 7/11/202 Dear Students Please joi Inbox	
	Samantha Rajapaksha Meeting Attendance 7/8/202 Dear Students Please ref	3
> 🚯	Samantha Rajapaksha Project Meeting 6/23/202 Dear All Join the meetin Inbox	
> 🚯	Samantha Rajapaksha Co Supervisor Meeting [EXTERNAL EMAIL] This Inbox Occurs every Th No conflicts RSVP	
> 🚯	Samantha Rajapaksha Project Meeting 6/6/202 Dear Students This week' Inbox	
> 🚯	Samantha Rajapaksha Research Project Logb 5/29/202 Dear Students Please co Inbox	-
> 🚯	Samantha Rajapaksha Project meeting 5/13/202 Extremely sorry for the la Inbox	4
> 🚯	Samantha Rajapaksha Co Supervisor Meeting 5/13/202 [EXTERNAL EMAI Deleted Items	
> 🚯	Samantha Rajapaksha External supervisor ide 2/16/202 4.30 pm is ok Thank you, Inbox	-

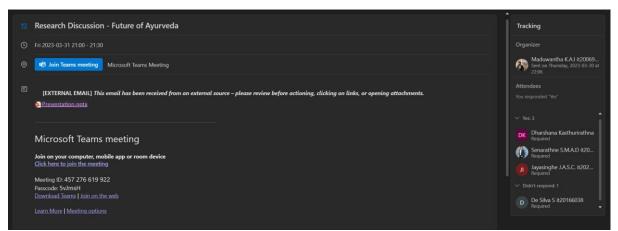
DK	Dharshana Kasthurirathna DRAFT RESEARCH PAPER 8/27/202
	Noted. You can go ahead with this one. Dharshan Inbo
DK	Dharshana Kasthurirathna
DK	Ethical Clearance Form for Research 6/1/202
	Please find the attached. Dharshana Kasthurirathn
DK	Dharshana Kasthurirathna
DK	Progress Meeting with Supervisor 5/22/202
	[EXTERNAL EMAIL] This email has been received fr Inbo
DV	Dharshana Kasthurirathna
DK	Research Discussion - Future of Ayurveda 3/30/202
	[EXTERNAL EMAIL] This email has been received fr Inbo
	Dharshana Kasthurirathna
> DK	Research discussion 3/30/202
	[EXTERNAL EMAIL] This email has been received fr Inbo
	Dharshana Kasthurirathna
> DK	Request for an Email Confirmation for Research 3/13/202
	I confirm the supervision of this project. Dharshan
PV	· ·
> DK	I confirm the supervision of this project. Dharshan
) DK	I confirm the supervision of this project. Dharshan Inbo Dharshana Kasthurirathna
	I confirm the supervision of this project. Dharshan Inbo Dharshana Kasthurirathna TAF Feedback Discussion 3/8/202
> DK	I confirm the supervision of this project. Dharshan Dharshana Kasthurirathna TAF Feedback Discussion [EXTERNAL EMAIL] This email has been received fr Inbo
	I confirm the supervision of this project. Dharshan Dharshana Kasthurirathna TAF Feedback Discussion [EXTERNAL EMAIL] This email has been received fr Dharshana Kasthurirathna
> DK	I confirm the supervision of this project. Dharshan Inbo Dharshana Kasthurirathna TAF Feedback Discussion [EXTERNAL EMAIL] This email has been received fr Inbo Dharshana Kasthurirathna External supervisor discussion 2/19/202
) DK	I confirm the supervision of this project. Dharshan Dharshana Kasthurirathna TAF Feedback Discussion [EXTERNAL EMAIL] This email has been received fr Dharshana Kasthurirathna External supervisor discussion 2/19/202 [EXTERNAL EMAIL] This email has been received fr Inbo
> DK	I confirm the supervision of this project. Dharshan Dharshana Kasthurirathna TAF Feedback Discussion [EXTERNAL EMAIL] This email has been received fr Dharshana Kasthurirathna External supervisor discussion [EXTERNAL EMAIL] This email has been received fr Inbo Dharshana Kasthurirathna Dharshana Kasthurirathna
> DK	I confirm the supervision of this project. Dharshan Dharshana Kasthurirathna TAF Feedback Discussion [EXTERNAL EMAIL] This email has been received fr Dharshana Kasthurirathna External supervisor discussion [EXTERNAL EMAIL] This email has been received fr Inbo Dharshana Kasthurirathna External supervisor discussion Dharshana Kasthurirathna External supervisor identified for research proje 2/16/202
> DK	I confirm the supervision of this project. Dharshan Dharshana Kasthurirathna TAF Feedback Discussion [EXTERNAL EMAIL] This email has been received fr Inbo Dharshana Kasthurirathna External supervisor discussion [EXTERNAL EMAIL] This email has been received fr Inbo Dharshana Kasthurirathna External supervisor identified for research proje 2/16/202 I'm free Sunday 9pm. Please send a meeting requ Inbo

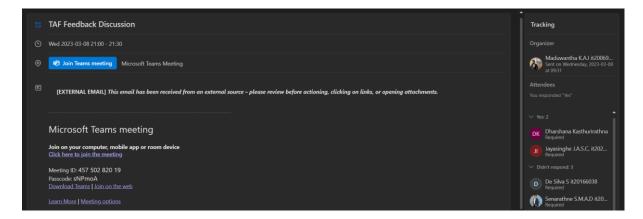


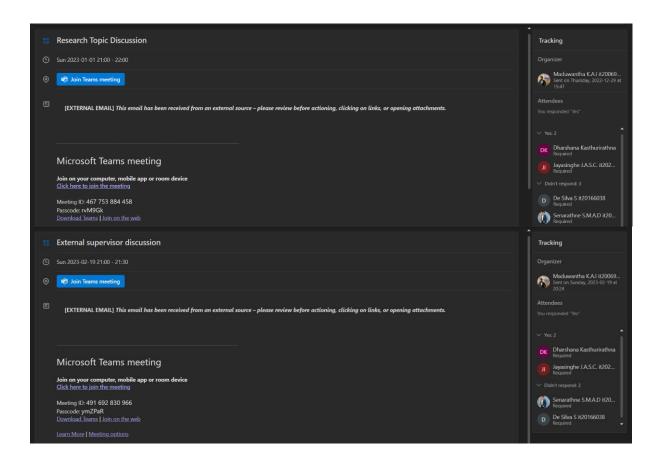


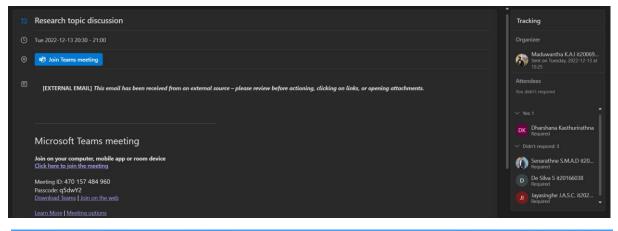


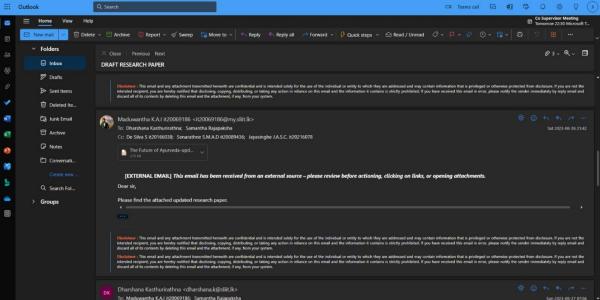


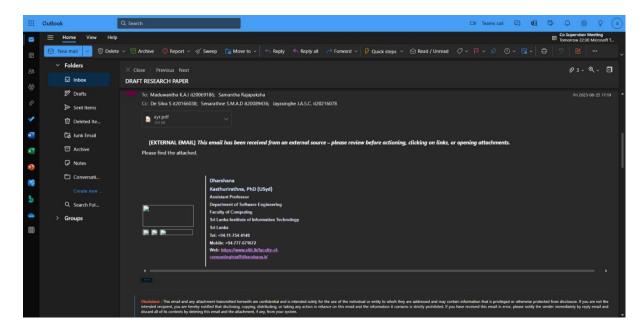


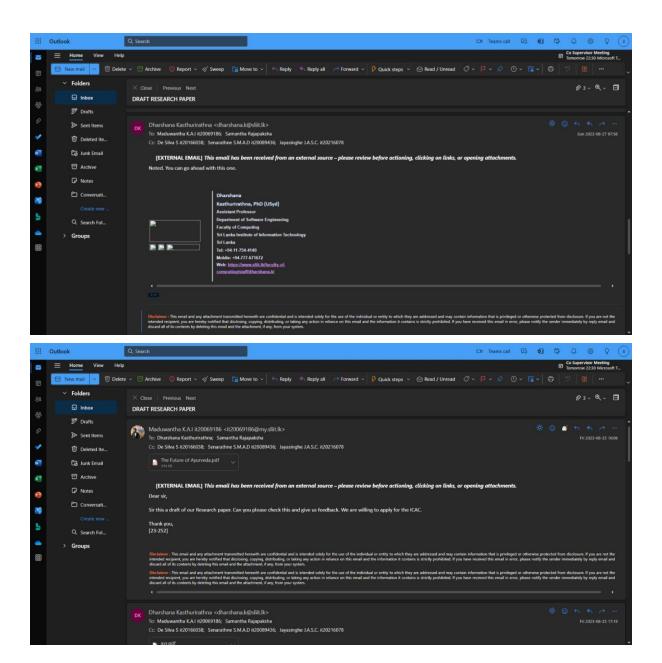




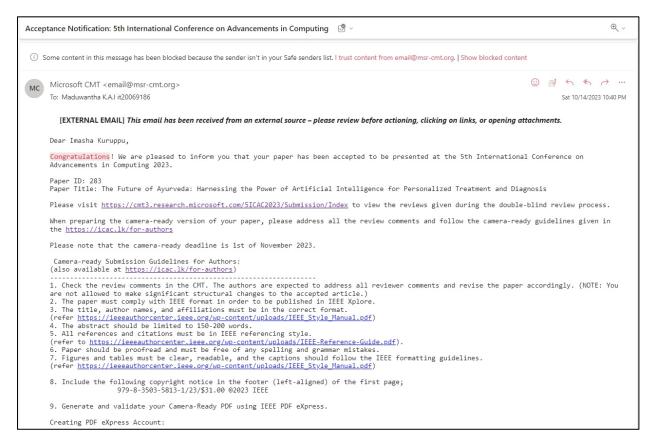


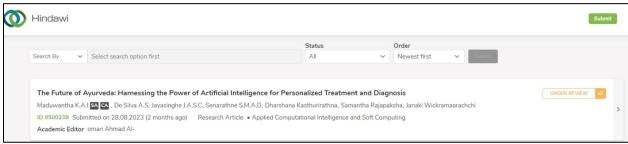






8. RESEARCH PAPER ACCEPTANCE LETTERS





	All results
> JV	Joyce Villanueva 9500238 -Final Reminder 9/19/2023 [EXTERNAL EMAIL] This em Inbox
) JV	Joyce Villanueva 9500238 -Final Reminder 9/18/2023 [EXTERNAL EMAIL] This em Inbox
JV	Joyce Villanueva 9500238 -Final Reminder 9/14/2023 [EXTERNAL EMAIL] This em Inbox
JV	Joyce Villanueva 9500238 -Final Reminder 9/14/2023 [EXTERNAL EMAIL] This em Inbox
JV	Joyce Villanueva 9500238 -Changes Requi 9/11/2023 [EXTERNAL EMAIL] This em Inbox
JV	Joyce Villanueva 9500238 -Changes Requir 9/7/2023 [EXTERNAL EMAIL] This em Inbox
JV	Joyce Villanueva 9500238 -Changes Requir 9/4/2023

9500238 -Changes Requir... 9/4/2023 [EXTERNAL EMAIL] This em... Inbox