

Object Detection and Segmentation Integration for Real-Time Urban Scene Analysis

Project ID: R25-002

Logbook

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B.Sc. (Hons) Degree in Information Technology Specialized in
Information Technology


Department of Software Engineering

Sri Lanka Institute of Information Technology Sri Lanka

October 2025

Declaration

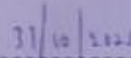
I declare that this is my own work, and this proposal does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any other university or Institute of higher learning and to the best of our knowledge and belief it does not contain any material previously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

Name	Student ID	Signature
Kumara B D A N	IT21256264	

The above candidates are carrying out research for the undergraduate Dissertation under my supervision.



Signature of the Supervisor:



Date:

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1. Work Progress

Week	Progress
November – 2024, Week 1	Began exploring possible research domains such as AI-based image understanding, digital-twin creation, and visual analytics. Focused on identifying a project combining innovation and strong research contribution.
November – 2024, Week 2	Conducted literature survey on object detection, segmentation, and depth estimation. Evaluated feasibility of applying single-image analysis for real-time urban scenes.
November – 2024, Week 3	Decided to investigate architectural analysis from 2D imagery using deep learning. Studied prior work on YOLO and segmentation models.
November – 2024, Week 4	Finalized research area—Object Detection and Segmentation Integration for Real-Time Urban Scene Analysis. Drafted initial objectives and problem statement.
December – 2024, Week 1	Prepared Topic Assessment Form (TAF) with background, objectives, and proposed methodology.
December – 2024, Week 2	Held discussion with supervisor to refine feasibility section and finalize submission plan.
January – 2025, Week 1	Created Charter and proposal structure. Outlined individual milestones and model selection plan.
January – 2025, Week 2	Completed proposal presentation slides; reviewed architecture diagrams for pipeline design.
January – 2025, Week 3	Conducted trial run of proposal presentation and refined based on feedback.
January – 2025, Week 4	Delivered official proposal presentation and submitted proposal report.
February – 2025, Week 1	Planned implementation schedule. Divided work into detection, segmentation, material classification, and surface-area estimation components.
February – 2025, Week 2	Researched state-of-the-art models (YOLOv8, SAM, CLIP, DepthPro) for each module.
February – 2025, Week 3	Set up development environment in Google Colab and configured PyTorch for experimentation.
February – 2025, Week 4	Began fine-tuning YOLOv8 using Cityscapes dataset for urban object detection.
March – 2025, Week 1	Completed initial YOLOv8 training run; analyzed mAP results and refined dataset annotations.
March – 2025, Week 2	Integrated MobileSAM for segmentation;

	tested prompt-based mask generation.
March – 2025, Week 3	Conducted experiments combining YOLOv8 bounding boxes with MobileSAM segmentation results.
March – 2025, Week 4	Prepared Progress Presentation 1 slides summarizing detection-segmentation pipeline.
April – 2025, Week 1	Presented Progress 1; received feedback on methodology and evaluation metrics.
April – 2025, Week 2	Added CLIP-based material classification with heuristic fusion (color, texture, position).
April – 2025, Week 3	Implemented post-processing using OpenCV to refine segmentation outputs.
April – 2025, Week 4	Began testing hierarchical segmentation for handling material heterogeneity.
May – 2025, Week 1	Integrated DepthPro model for single-image depth inference.
May – 2025, Week 2	Implemented Poisson Surface Reconstruction for 3D mesh generation and surface-area estimation.
May – 2025, Week 3	Tested full pipeline on sample urban datasets and computed surface-area errors.
May – 2025, Week 4	Documented methodology and prepared intermediate report.
June – 2025, Week 1	Performed extensive testing and parameter tuning for accuracy and runtime.
June – 2025, Week 2	Drafted and submitted research paper to ICAC 2025.
June – 2025, Week 3	Revised paper per supervisor feedback; finalized figures and results.
June – 2025, Week 4	Validated pipeline performance and prepared PP2 content.
July – 2025, Week 1	Conducted experiments to compare YOLOv8 + MobileSAM vs baseline methods.
July – 2025, Week 2	Enhanced visualization outputs (segmentation UI, material composition charts).
July – 2025, Week 3	Compiled experimental results and analysis for final report.
July – 2025, Week 4	Reviewed ICAC submission confirmation; began final report drafting.
August – 2025, Week 1	Supervisor approved research paper submission to ICAC.
August – 2025, Week 2	Finalized individual report structure and result interpretation.
August – 2025, Week 3	Conducted internal review and proofreading of report.
August – 2025, Week 4	Submitted individual final report to CDAP.
September – 2025, Week 1	Developed visual comparison charts and depth map evaluation section.
September – 2025, Week 2	Presented 90% progress at PP2; panel feedback recorded.
September – 2025, Week 3	Incorporated panel feedback; improved result

	visualization.
September – 2025, Week 4	Designed presentation slides for final evaluation.
October – 2025, Week 1	Completed validation testing on real-world architectural images.
October – 2025, Week 2	Received ICAC acceptance notification; refined presentation visuals.
October – 2025, Week 3	Deployed final model to cloud environment for live demonstration.
October – 2025, Week 4	Delivered final presentation and submitted complete dissertation.

2. Supervisor Meeting Logs

Date	Platform / Location	Remarks
Nov 21, 2024 (Thu)	Microsoft Teams	Initial meeting after topic selection; discussed TAF preparation and upcoming proposal schedule.
Dec 5, 2024 (Thu)	Microsoft Teams	Reviewed draft TAF; supervisor feedback on objectives and feasibility.
Dec 18, 2024 (Wed)	Microsoft Teams	Progress check on proposal drafting; clarified scope of components.
Dec 19, 2024 (Thu)	Microsoft Teams	Finalized TAF submission and confirmed biweekly meetings from January.
Jan 2, 2025 (Thu)	Microsoft Teams	Discussed proposal structure and responsibilities for Charter document.
Jan 9, 2025 (Thu)	6th Floor, Main Building	Signed Charter; supervisor advised improvements for proposal presentation.
Jan 16, 2025 (Thu)	Microsoft Teams	Reviewed draft proposal slides; minor adjustments recommended.
Jan 23, 2025 (Thu)	6th Floor, Main Building	Trial run of proposal presentation; feedback on flow and clarity.
Jan 30, 2025 (Thu)	Microsoft Teams	Proposal preparation review; confirmed submission readiness.
Feb 6, 2025 (Thu)	6th Floor, Main Building	Discussed proposal results; planned system development schedule.
Feb 13, 2025 (Thu)	Microsoft Teams	Shared early IoT component research; discussed hardware sourcing.
Feb 20, 2025 (Thu)	6th Floor, Main Building	Supervisor feedback on hardware feasibility; advised cheaper alternatives.
Feb 27, 2025 (Thu)	Microsoft Teams	Follow-up on hardware procurement and coding progress.
Mar 6, 2025 (Thu)	6th Floor, Main Building	Reviewed IoT coding progress; discussed testing plan.
Mar 13, 2025 (Thu)	Microsoft Teams	Discussed initial prototype issues; planned next testing cycle.
Mar 20, 2025 (Thu)	6th Floor, Main Building	Supervisor review on IoT prototype; improvement feedback.
Mar 27, 2025 (Thu)	Microsoft Teams	Prepared for Progress Presentation 1; checked slide content.
Apr 3, 2025 (Thu)	6th Floor, Main Building	Conducted mock PP1; feedback on presentation structure.
Apr 10, 2025 (Thu)	Microsoft Teams	Discussed PP1 results and suggested improvement areas.
Apr 17, 2025 (Thu)	6th Floor, Main Building	Planned hardware upgrades for autonomous navigation.
Apr 24, 2025 (Thu)	Microsoft Teams	Introduced pretrained model from external supervisor for matching images.
May 1, 2025 (Thu)	6th Floor, Main Building	Discussed IoT device housing; 3D printing suggested.

May 8, 2025 (Thu)	Microsoft Teams	Reviewed 3D model design and quotations for printing.
May 15, 2025 (Thu)	6th Floor, Main Building	Supervisor checked progress of frontend development.
May 22, 2025 (Thu)	Microsoft Teams	Discussed integration of backend model with frontend.
May 29, 2025 (Thu)	6th Floor, Main Building	Finalized acrylic sheet as IoT housing alternative.
Jun 5, 2025 (Thu)	Microsoft Teams	Supervisor reviewed Python backend and SuperGlue integration.
Jun 12, 2025 (Thu)	6th Floor, Main Building	Discussed research paper draft and experiment validation.
Jun 19, 2025 (Thu)	Microsoft Teams	Feedback on paper structure and data representation.
Jun 26, 2025 (Thu)	6th Floor, Main Building	Reviewed experiment results; finalized paper content.
Jul 10, 2025 (Thu)	6th Floor, Main Building	Supervisor checked final draft before submission.
Jul 24, 2025 (Thu)	6th Floor, Main Building	Reviewed ICAC submission and progress on final report.
Aug 7, 2025 (Thu)	6th Floor, Main Building	Feedback on final report writing and PP2 preparation.
Aug 21, 2025 (Thu)	6th Floor, Main Building	Reviewed final submission; confirmed proofreading stage.
Aug 21, 2025 (Thu)	Microsoft Teams	Final sync-up before submission; confirmed deadlines.
Sep 4, 2025 (Thu)	Microsoft Teams	Discussed PP2 presentation slides and algorithm demonstration.
Sep 4, 2025 (Thu)	6th Floor, Main Building	Conducted PP2 dry run and gathered feedback.
Sep 18, 2025 (Thu)	Microsoft Teams	Reviewed panel feedback and integration progress.
Oct 16, 2025 (Thu)	Microsoft Teams	Final presentation review; validation testing and WSA submission updates.

3. Meeting Notes

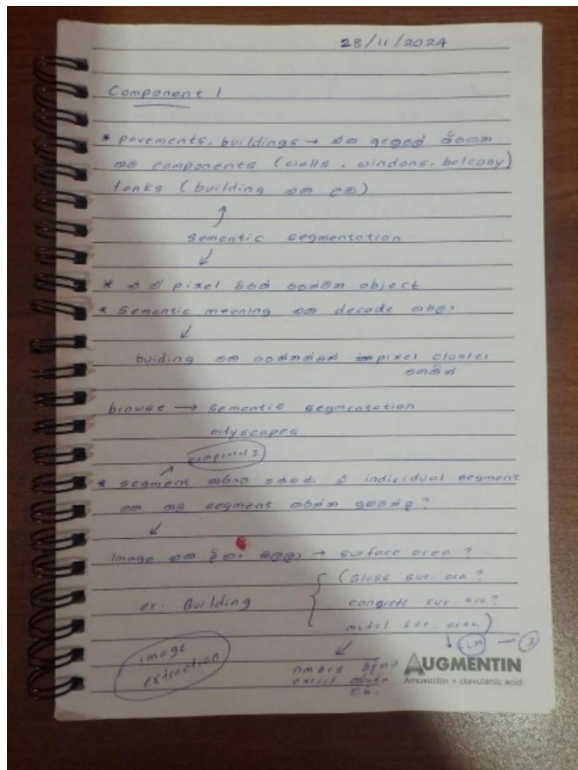


Figure 1: Note 1

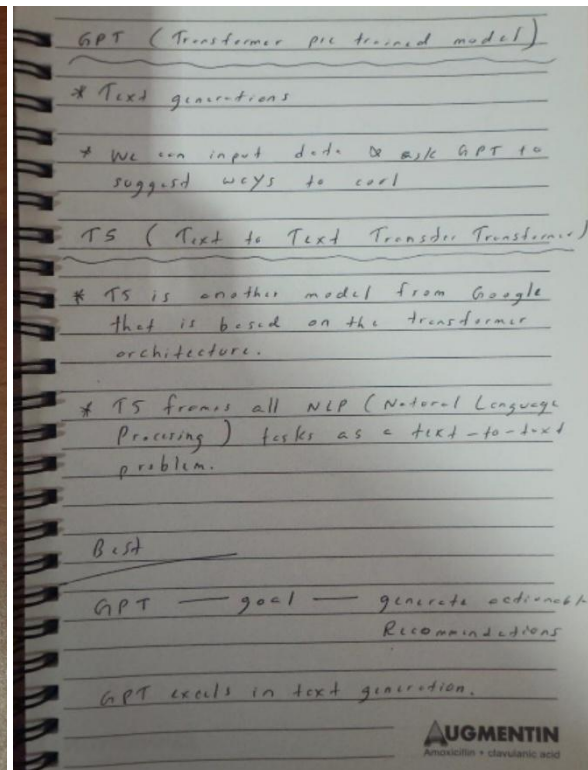


Figure 2: Note 2

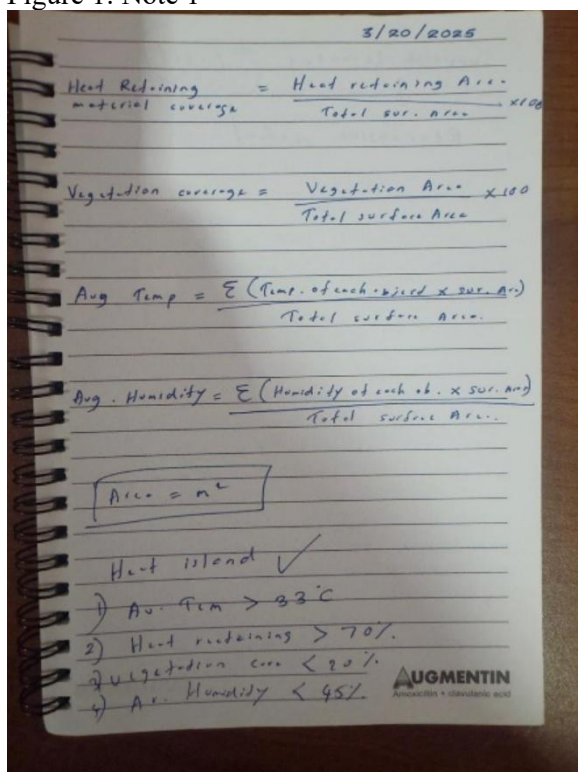


Figure 3: Note 3

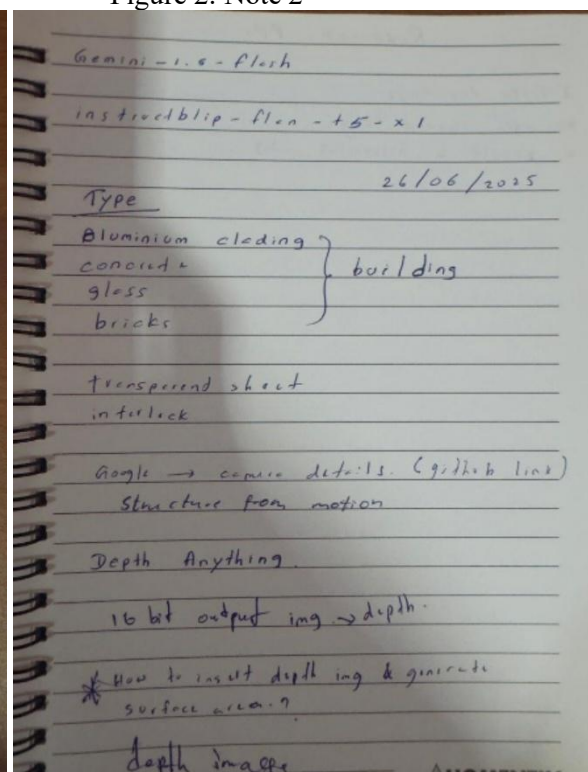


Figure 4: Note 4

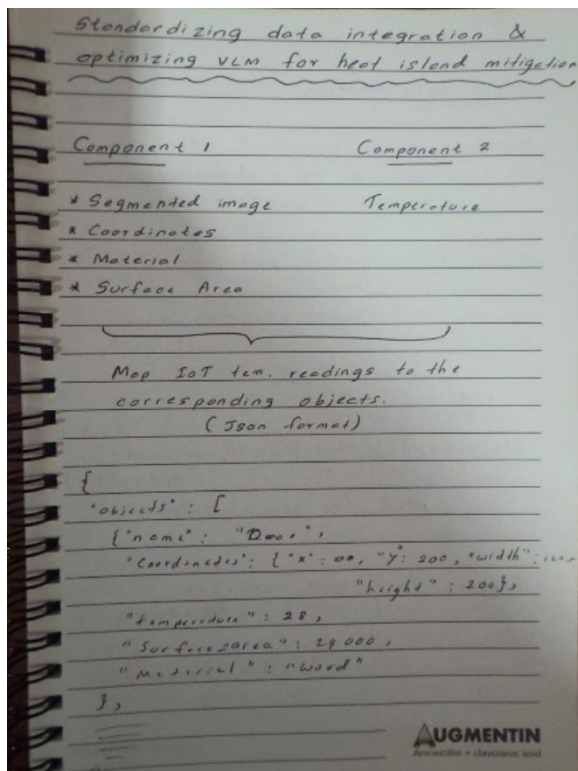


Figure 5: Note 5

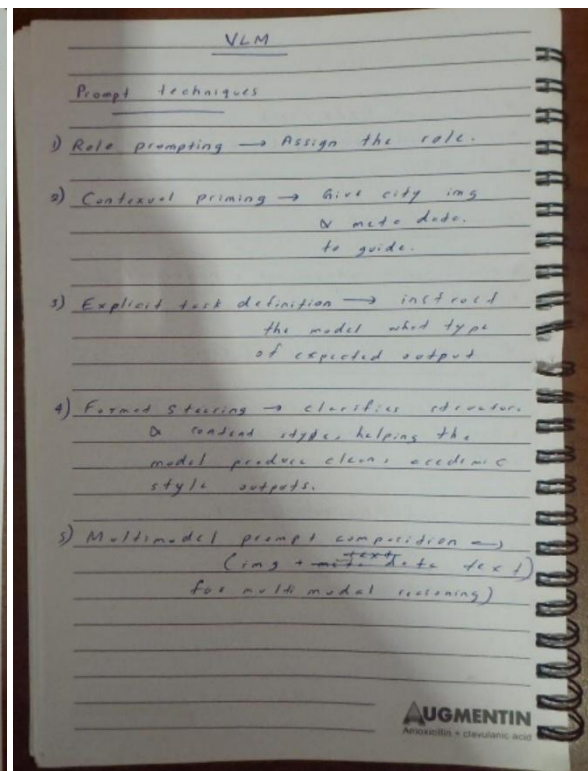


Figure 6: Note 6

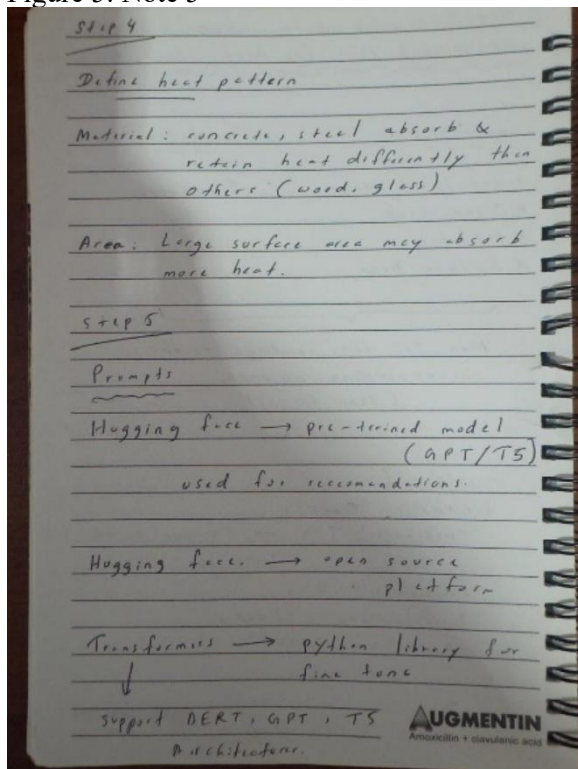


Figure 7: Note 7

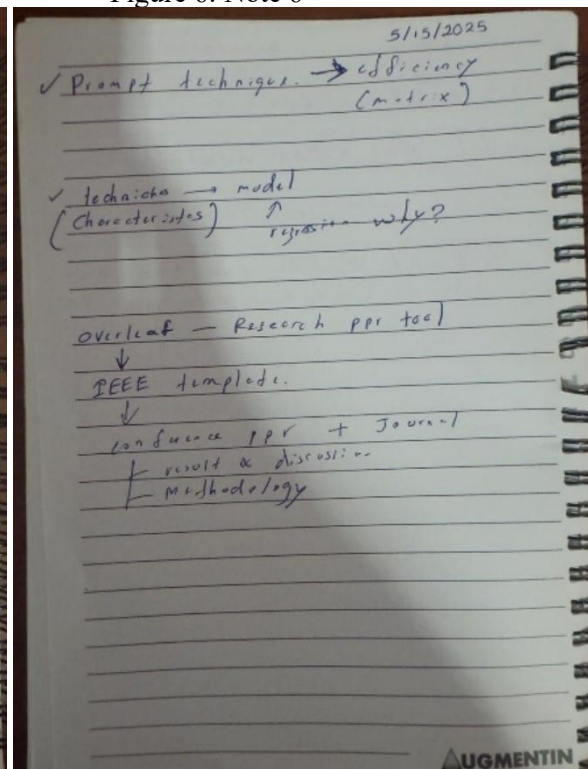


Figure 8: Note 8

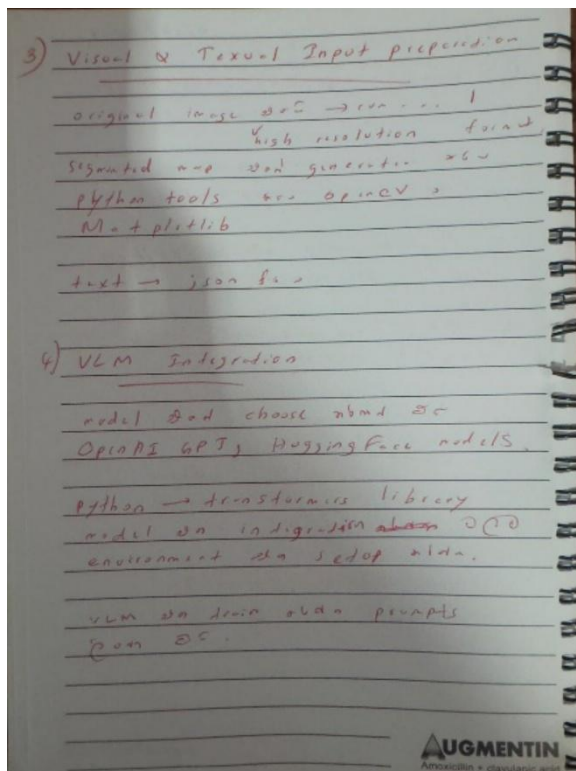


Figure 9: Note 9

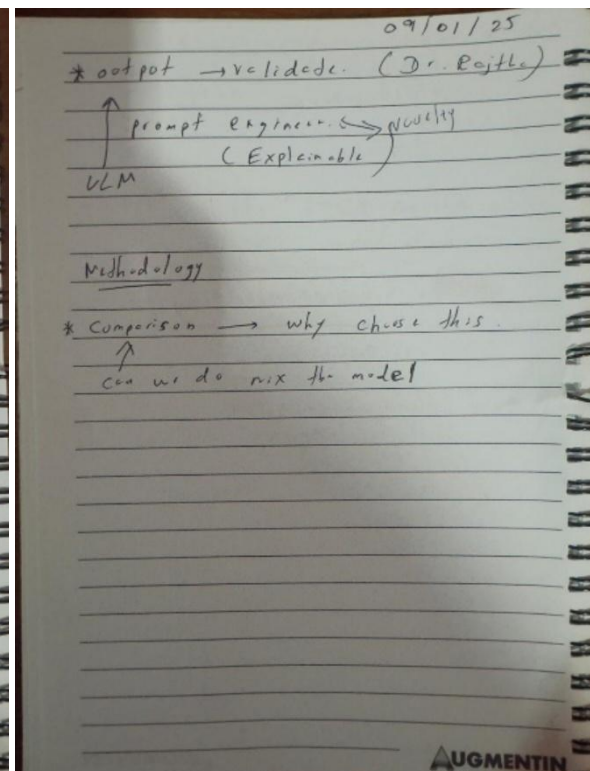


Figure 10: Note 10

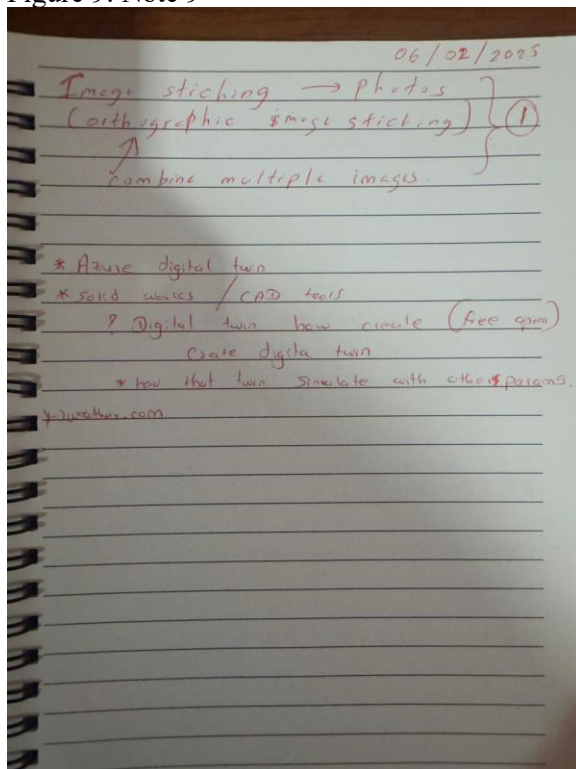


Figure 11: Note 11

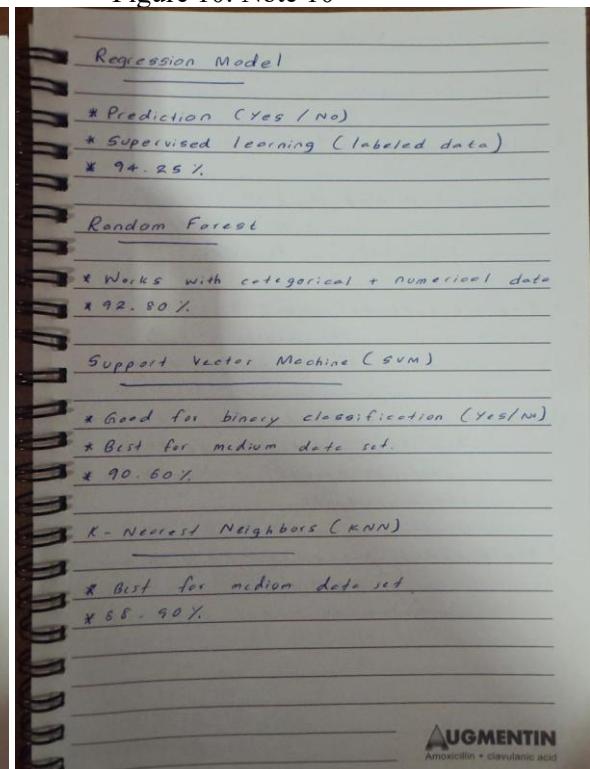


Figure 12: Note 12

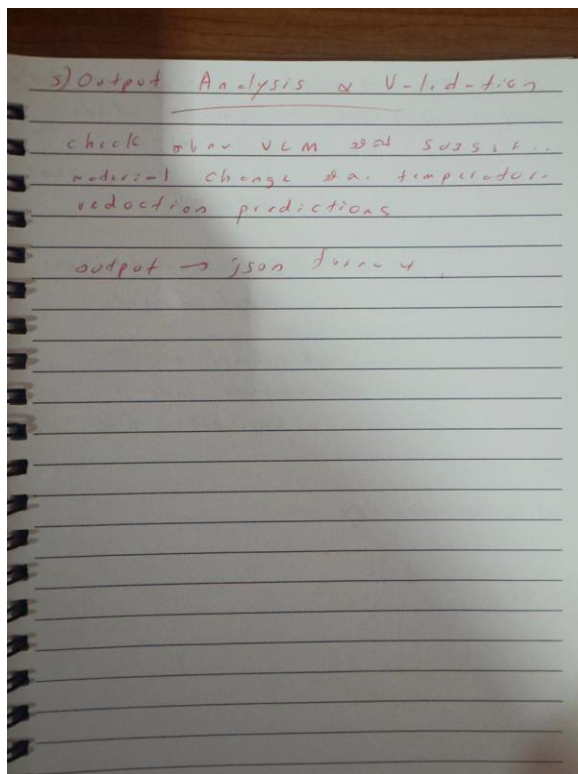


Figure 13: Note 13

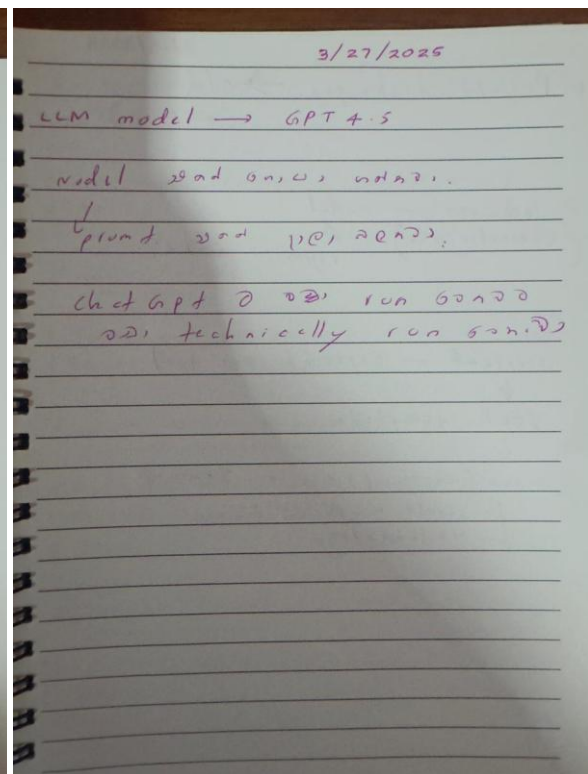


Figure 14: Note 14

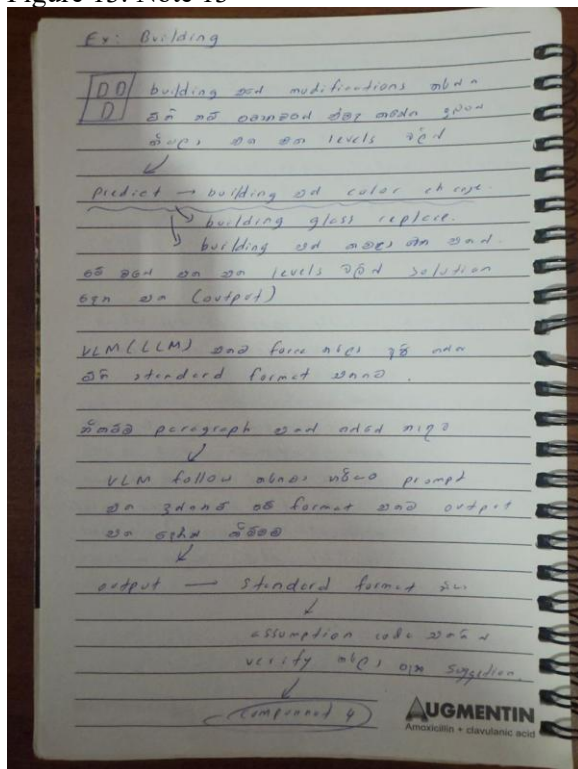


Figure 15: Note 15

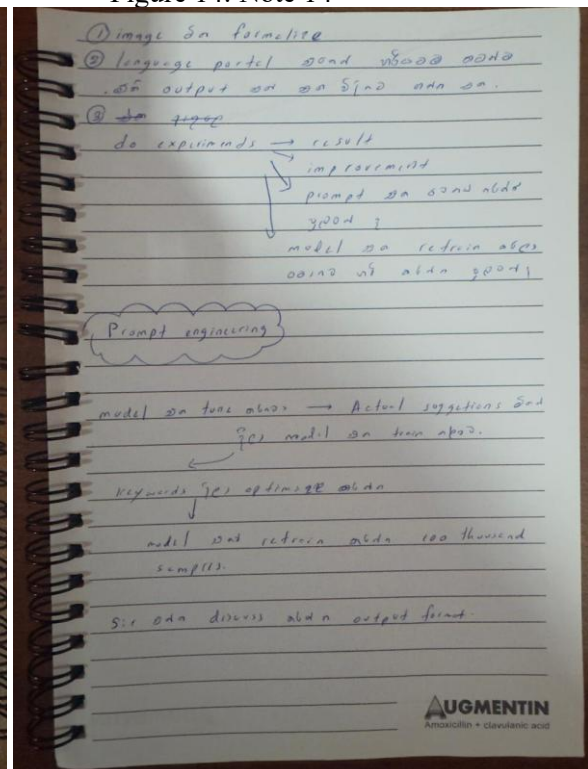


Figure 16: Note 16

Component 3

* Avishka + Ischithaka

photo + description (material, Area, temp)

data format (json)

Standard format (image → resolution, temp, date)

LLM → model (text, image, CRAB photo - original), segmentation

map to text, json format, image

LLM → model (text, image, CRAB photo - original), segmentation

map to text, json format, image

① information for format (image → image, text, temp, bounding box, temp) standard & scalable format

AUGMENTIN
Amoxicillin + clavulanic acid

Figure 17: Note 17

5/12/2024

Data collection & Indigrid

1) Segmented image data, material type, surface area, temp - comp 1

IoT device send measure by temperature - component 2

2) data map about python, use about

3) script to map by data in valid, about dictionary format, /t-bu

Data standardization

convert json format and script about data

convert python to json library use about read

AUGMENTIN
Amoxicillin + clavulanic acid

Figure 18: Note 18

Component 2

temp.

* as objects individually identify (predictions)

* device can move about temperature record of area + about images about record down about

input → description of area, temp, record of area

* XYZ 360° device. (Robo arm)

* IR thermometer → laser → aim area → target

* Device → Automation about measurements, about surface and temp. about map about (vision sir)

* segment → output to get the segment of temp. (vision sir)

AUGMENTIN
Amoxicillin + clavulanic acid

Figure 19: Note 19

① image segmentation (existing model have)

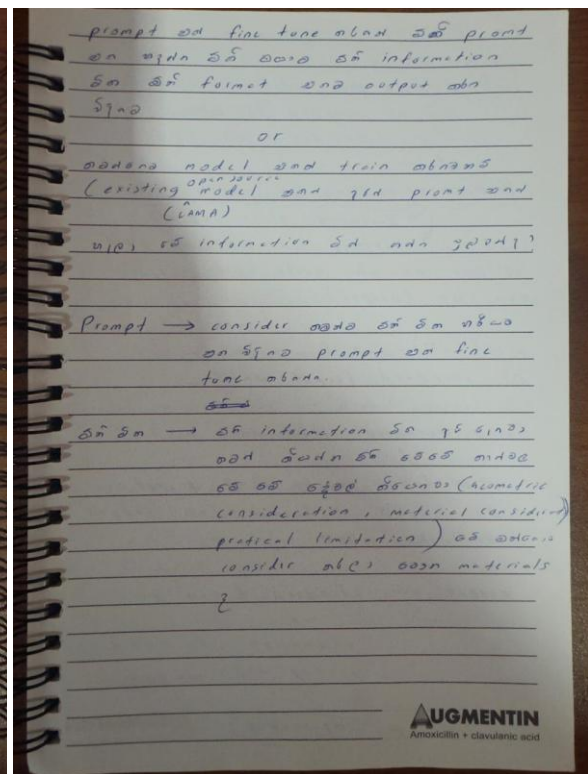
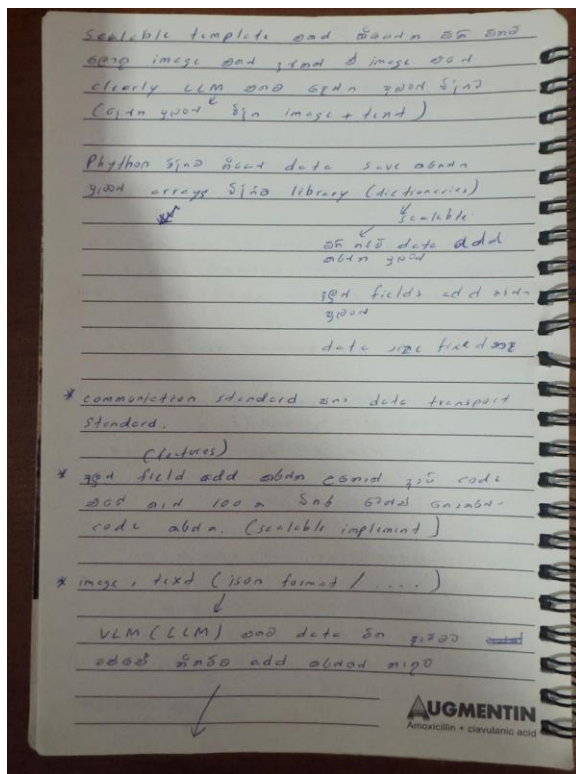
② individual segment to identify materials

③ material to surface area to calculate about (thermal property → about data about)

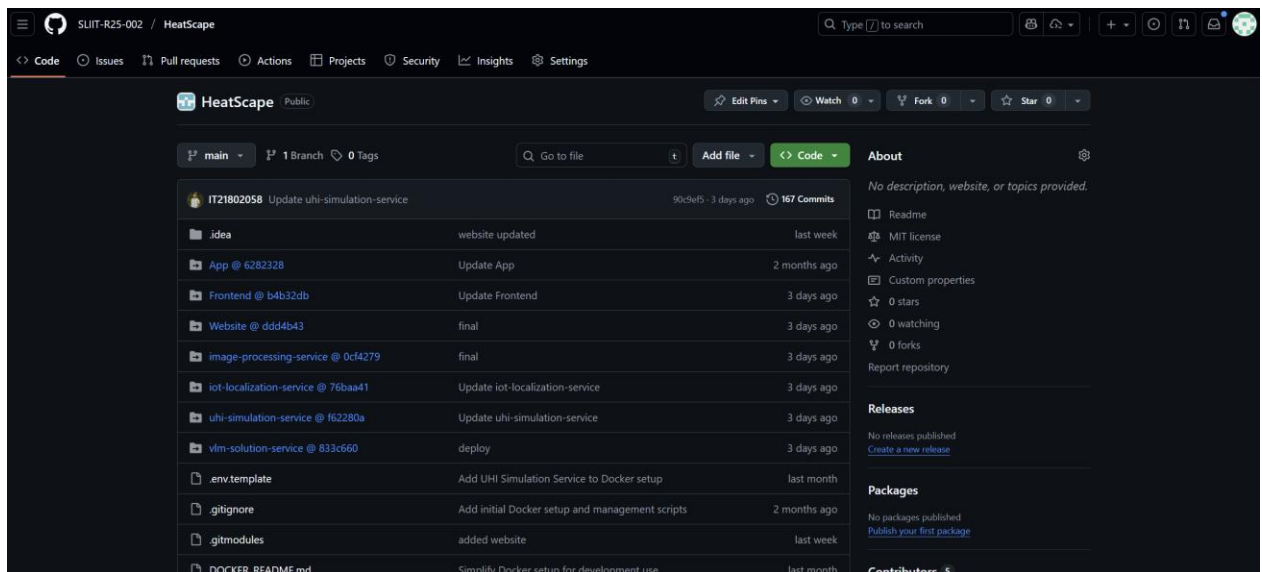
main → image and full description to job extract data.

AUGMENTIN
Amoxicillin + clavulanic acid

Figure 20: Note 20



4. Git Activity History



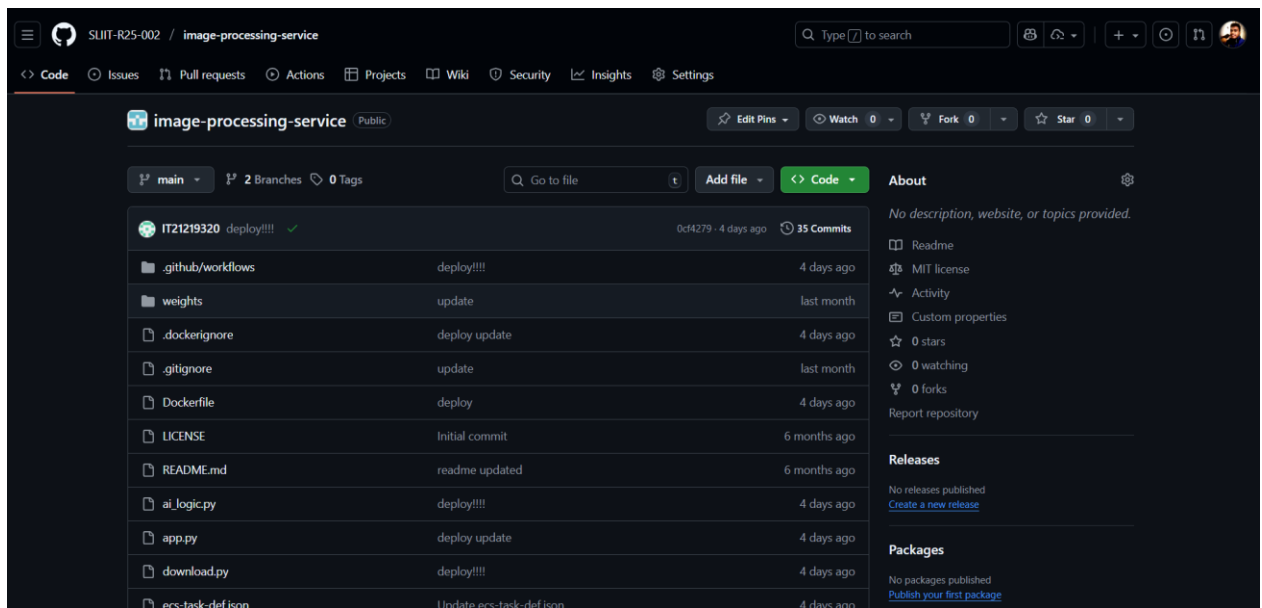


Figure 24: Git Repo (image processing Microservice)

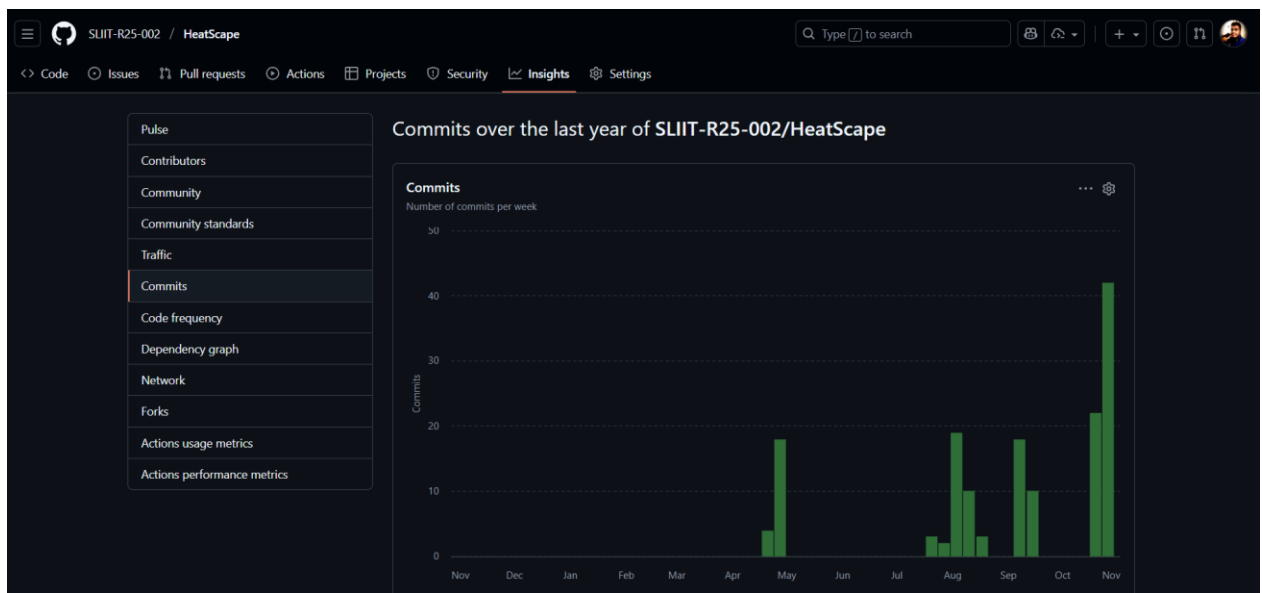


Figure 25: Git Code Commits (Main Repo)

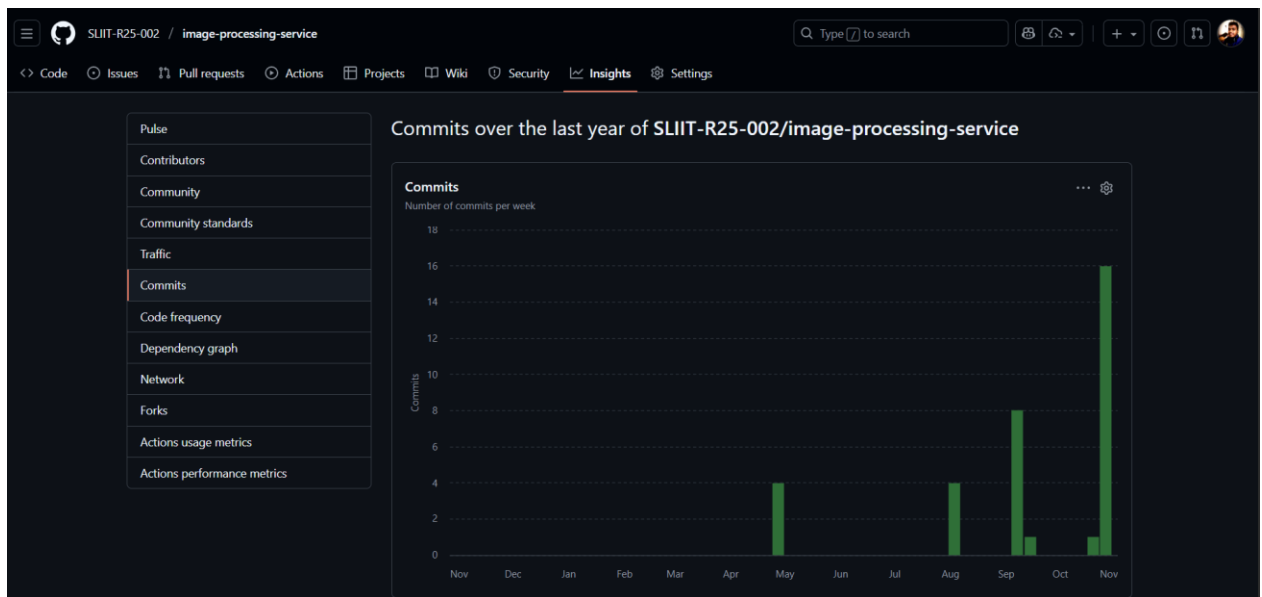


Figure 26: Git Code Commits (image processing Microservice)

5. Screenshots of Meetings & Mails

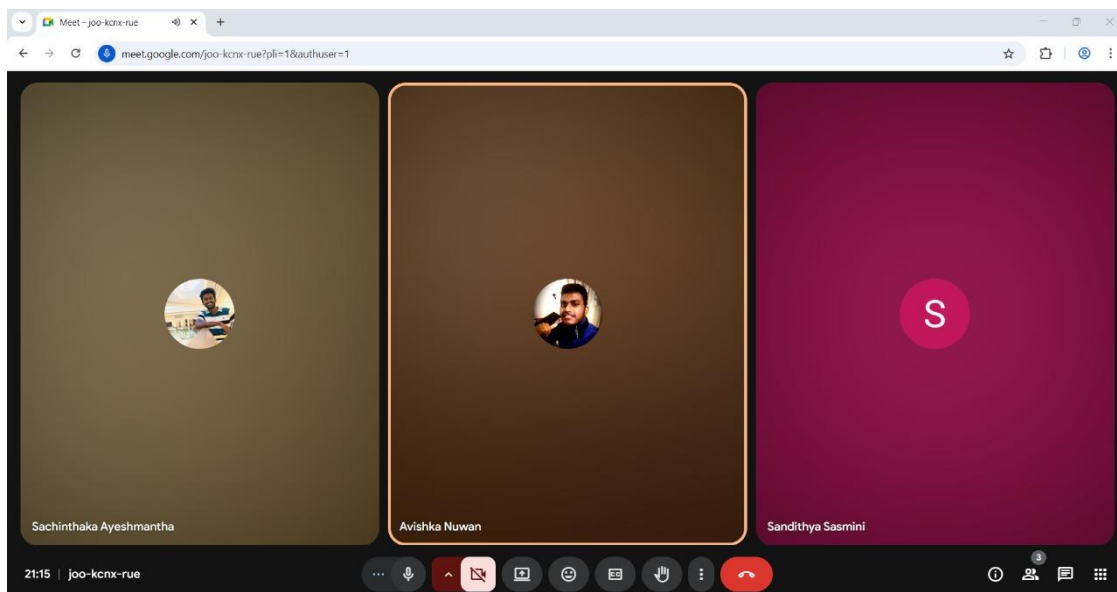


Figure 27 : Group Meeting

<input type="checkbox"/>	☆ Vishan Jayasinghear. 2	Inbox Canceled: Heat Island Research Meeting - On campus - Vishan Jayasinghearachchi. Microsoft Teams Need help? Join the meeting now. Meeting ID: 434 846 534 662 3. Passcode: P38cs9NU Canceled: Heat ... +2	Oct 28
<input type="checkbox"/>	☆ me, Rajit., Vishan 11	Inbox Heat Island Effect Research Paper Review - Cc: Vishan Jayasinghearachchi Subject: Re: Heat Island Effect Research Paper Review. [EXTERNAL EMAIL] This email has been received ...	Oct 21
<input type="checkbox"/>	☆ me, Vishan, Rajitha 3	Inbox Research paper acceptance update - To: Vishan Jayasinghearachchi ; Rajitha De Silva ; Kaushalya Rajapakse	Oct 24
<input type="checkbox"/>	☆ Vishan Jayasinghear. 2	Inbox Regarding WSA Competition - On Mon, Oct 20, 2025 at 10:54 AM Vishan Jayasinghearachchi wrote: Dear Ayesmantha, Yes. Can you come this Wednesday at 1.30pm?	Oct 20
<input type="checkbox"/>	☆ me, Vishan 3	Inbox Regarding WSA Competition - To: Vishan Jayasinghearachchi Cc: Kaushalya Rajapakse Subject: Regarding WSA Competition	Oct 20
<input type="checkbox"/>	☆ Rajitha, me, Vishan 4	Inbox Re: Heat Island Research Meeting - On campus - Cc: Vishan Jayasinghearachchi ; Kaushalya Rajapakse Subject: Re: Heat Island Research Meeting - On campus	Oct 7
<input type="checkbox"/>	☆ Vishan Jayasinghear. 2	Inbox Regarding a Co-supervisor - To: Vishan Jayasinghearachchi Subject: Re: Regarding a Co-supervisor. Dear Sir., Could you please share Ms. Kaushalya's email ...	11/8/24
<input type="checkbox"/>	☆ Vishan Jayasinghear.	Inbox RE: Request for Supervision of Final Year Research Project - To: Vishan Jayasinghearachchi Cc: Kumara B.D.A.N it21256264 ; Silva.	9/23/24
<input type="checkbox"/>	☆ Vishan Jayasinghear.	Inbox Canceled: Heat Island Research Meeting - On campus - Vishan Jayasinghearachchi. Microsoft Teams Need help? Join the meeting now. Meeting ID: 434 846 534 662 3. Passcode: P38cs9NU	Oct 7
<input type="checkbox"/>	☆ Vishan Jayasinghear.	Inbox Canceled: Heat Island Research Meeting - Vishan Jayasinghearachchi. Microsoft Teams Need help? Join the meeting now. Meeting ID: 458 207 215 391. Passcode: Vt92m7ui	12/11/24
<input type="checkbox"/>	☆ Vishan Jayasinghear.	Inbox Heat Island Research Meeting - Vishan Jayasinghearachchi. Disclaimer : This email and any attachment transmitted herewith are confidential and is intended solely for the use of the ...	12/10/24
<input type="checkbox"/>	☆ Vishan Jayasinghear.	Inbox Canceled: Heat Island Research Meeting - On campus - Vishan Jayasinghearachchi. Microsoft Teams Need help? Join the meeting now. Meeting ID: 434 846 534 662 3. Passcode: P38cs9NU	Oct 2
<input type="checkbox"/>	☆ Vishan Jayasinghear. 3	Inbox Heat Island Research Meeting - On campus - Vishan Jayasinghearachchi. Microsoft Teams Need help? Join the meeting now. Meeting ID: 434 846 534 662 3. Passcode: P38cs9NU Canceled: Heat ... +3	
<input type="checkbox"/>	☆ me	New research paper for ICITR Conference - Dear Sir., As we discussed over the phone, I have completed and attached the new research paper for the IoT component of our project. IoT-Based Mobi...	Sep 30

Figure 28: Emails 1

<input type="checkbox"/>	☆ me, Rajitha, Vishan 6	Inbox Regarding ICAC Submission - From: it21219320 Ayesmantha S.K.S Sent: Wednesday, August 20, 2025 2:25 AM To: Rajitha De Silva Cc: Vishan Jayasinghearachchi ; Kaushalya Rajapakse ... image.png +2	Aug 20
<input type="checkbox"/>	☆ me, Vishan 2	Inbox Progress Presentation 2 Update - To: Vishan Jayasinghearachchi Cc: Kaushalya Rajapakse ; Rajitha De Silva	Sep 19
<input type="checkbox"/>	☆ me, Vishan, Rajitha 3	Inbox Finalized research paper - To: Rajitha De Silva ; Vishan Jayasinghearachchi Subject: Finalized research paper HeatScape - De...	Aug 25
<input type="checkbox"/>	☆ Vishan Jayasinghear.	Inbox Request for Supervision of Final Year Research Project - From: Ayesmantha S.K.S it21219320 Sent: Monday, September 23, 2024 9:44 AM To: Vishan Jayasinghearachchi	9/24/24
<input type="checkbox"/>	☆ Vishan, me 2	Inbox Canceled: Heat Island Research Meeting - On campus - Vishan Jayasinghearachchi. Microsoft Teams Need help? Join the meeting now. Meeting ID: 434 846 534 662 3. Passcode: P38cs9NU	Sep 8
<input type="checkbox"/>	☆ me, Vishan, Kaushal. 4	Inbox Regarding research mid marks - From: Kaushalya Rajapakse Sent: 12 September 2025 17:00 To: Vishan Jayasinghearachchi ; Ayesmantha S.K.S it21219320 Subject: Re: Regarding research ...	Sep 12
<input type="checkbox"/>	☆ Vishan Jayasinghear. 3	Inbox Canceled: Heat Island Research Meeting - On campus - Dear all, Dr. Rajitha will join with our regular meeting online. I still prefer if the team members come for the meeting on campus.	Aug 21
<input type="checkbox"/>	☆ Vishan Jayasinghear.	Inbox Canceled: Heat Island Research Meeting - On campus - Best regards, Vishan Jayasinghearachchi. Microsoft Teams Need help? Join the meeting now Meeting ID: 434 846 534 662 3 Passcode: P38cs9NU	Aug 22
<input type="checkbox"/>	☆ me, Vishan 2	Inbox Academic Coach for DevQuest - To: Vishan Jayasinghearachchi Subject: Academic Coach for DevQuest. [EXTERNAL EMAIL] This email has been received from an external ...	Sep 1
<input type="checkbox"/>	☆ Vishan Jayasinghear. 2	Inbox FW: 🏆 Rajitha is ready to work with you on Heat Island Research Project in Notion - From: Ayesmantha S.K.S it21219320 Sent: Thursday, November 21, 2024 11:46 AM To: Vishan Jayasinghearachchi Cc: ...	11/21/24
<input type="checkbox"/>	☆ Vishan Jayasinghear.	Inbox RE: Updated Draft of Research Paper for Review - To: Vishan Jayasinghearachchi Subject: Updated Draft of Research Paper for Review. Dear Sir., I hope you're doing well. HeatScape.pdf	Jun 26
<input type="checkbox"/>	☆ Vishan Jayasinghear.	Inbox Confirmation of Research Project Supervisor - To: Vishan Jayasinghearachchi Subject: Re: Confirmation of Research Project Supervisor. Dear Sir., Thank you for your response.	10/16/24
<input type="checkbox"/>	☆ Vishan Jayasinghear.	Inbox Heat Island Research Meeting - On campus - Dear all, Dr. Rajitha will join with our regular meeting online. I still prefer if the team members come for the meeting on campus.	Jul 24
<input type="checkbox"/>	☆ Vishan Jayasinghear.	Inbox Heat Island Research Meeting - On campus - Dear all, Dr. Rajitha will join with our regular meeting online. I still prefer if the team members come for the meeting on campus.	Jul 23
<input type="checkbox"/>	☆ Kaushalya Rajapakse	Inbox Re: Request for Co-Supervision of Final Year Research Project - From: Ayesmantha S.K.S it21219320 Sent: 11 November 2024 12:49 To: Kaushalya Rajapakse Cc: Vishan Jayasinghearachchi ; Silva.	11/11/24
<input type="checkbox"/>	☆ Vishan Jayasinghear.	Inbox Heat Island Research Meeting - On campus - Dear all, Pushing this meeting to 3.30 pm due to faculty board meetings. Best regards, Vishan Jayasinghearachchi. Time updated as discussed. noname noname +3	Mar 20

Figure 29: Emails 2

<input type="checkbox"/>	☆	Vishan Jayasinghear. 4	Inbox	Re: Confirmation of Research Project Supervisor - From: Ayeshmantha S.K.S it21219320 Sent: Friday, September 27, 2024 9:46 PM To: Vishan Jayasinghearachchi Subject: Confirmation of Research Project ...	10/16/24
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Tentative: Research Paper Review #2 - Disclaimer : This email and any attachment transmitted herewith are confidential and is intended solely for the use of the individual or entity to ...	Jul 29
<input type="checkbox"/>	☆	Vishan Jayasinghear. 2	Inbox	Heat Island Research Meeting - Vishan Jayasinghearachchi. Microsoft Teams Need help? Join the meeting now. Meeting ID: 458 207 215 391. Passcode: Vt9zM7ui	Apr 11
<input type="checkbox"/>	☆	me, Rajitha 5	Inbox	Research paper review - To: Rajitha De Silva ; Vishan Jayasinghearachchi Subject: Research paper review	Aug 19
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Canceled: Heat Island Research Meeting - On campus - Canceling due to the May day holiday. Disclaimer : This email and any attachment transmitted herewith are confidential and is intended solely for the ...	Apr 30
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Heat Island Research Meeting - On campus - Dear all. Moving the meeting to 2pm as requested. Microsoft Teams Need help? Join the meeting now. Meeting ID: 484 102 012 728. Passcode: we6uU9rz	May 28
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Heat Island Research Meeting - On campus - Dear all, Dr. Rajitha will join with our regular meeting online. I still prefer if the team members come for the meeting on campus.	Apr 11
<input type="checkbox"/>	☆	Vishan Jayasinghear. 3	Inbox	RP meeting - From: Ayeshmantha S.K.S it21219320 Sent: Wednesday, November 6, 2024 3:59 PM To: Vishan Jayasinghearachchi Subject: Re: RP meeting Dear Sir, ...	11/6/24
<input type="checkbox"/>	☆	Vishan Jayasinghear. 2	Inbox	Canceled: Heat Island Research Meeting - Vishan Jayasinghearachchi. Microsoft Teams Need help? Join the meeting now. Meeting ID: 458 207 215 391. Passcode: Vt9zM7ui	Apr 11
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Heat Island Research Meeting - Best regards, Vishan Jayasinghearachchi. Microsoft Teams Need help? Join the meeting now Meeting ID: 458 207 215 391 Passcode: Vt9zM7ui	11/27/24
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Heat Island Research Meeting - Best regards, Vishan Jayasinghearachchi. Microsoft Teams Need help? Join the meeting now Meeting ID: 458 207 215 391 Passcode: Vt9zM7ui	11/28/24
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Re: Update on project proposal presentation - From: Ayeshmantha S.K.S it21219320 Sent: Tuesday, January 28, 2025 11:14 AM To: Vishan Jayasinghearachchi Subject: Update on project proposal ...	Jan 29
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Canceled: Heat Island Research Meeting - On campus - Dear all, Cancelling due to Poya holiday. Microsoft Teams Need help? Join the meeting now. Meeting ID: 484 102 012 728. Passcode: we6uU9rz	Jul 8
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Heat Island Research Meeting - On campus - Disclaimer : This email and any attachment transmitted herewith are confidential and is intended solely for the use of the individual or entity to ...	Mar 20
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Heat Island Research Meeting - Dear all, The meeting discuss the heat island research work as discussed. Best regards, Vishan Jayasinghearachchi. Microsoft Teams Need help?	11/29/24
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Heat Island Research Meeting - Vishan Jayasinghearachchi. Microsoft Teams Need help? Join the meeting now. Meeting ID: 458 207 215 391. Passcode: Vt9zM7ui	11/21/24
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Canceled: Heat Island Research Meeting - On campus - Cancelling due to the examinations. Microsoft Teams Need help? Join the meeting now. Meeting ID: 484 102 012 728. Passcode: we6uU9rz	May 29
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Heat Island Research Meeting - Vishan Jayasinghearachchi. Microsoft Teams Need help? Join the meeting now. Meeting ID: 458 207 215 391. Passcode: Vt9zM7ui	Jan 3
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Heat Island Research Meeting - On campus - Vishan Jayasinghearachchi. Disclaimer : This email and any attachment transmitted herewith are confidential and is intended solely for the use of the ...	Jan 3
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Re: Inquiry about meeting tomorrow - From: Ayeshmantha S.K.S it21219320 Sent: Wednesday, April 2, 2025 4:37 PM To: Vishan Jayasinghearachchi Cc: Kaushalya Rajapakse Subject: Inquiry about ...	Apr 3

Figure 30: Emails 3

<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	RE: Reminder – Imagine Cup & Author List - vishan.j@slit.lk Subject: Reminder – Imagine Cup & Author List Hi Vishan Sir, Just a quick reminder from our last	Aug 11
<input type="checkbox"/>	☆	Rajitha, me 8	Inbox	Re: Clarification on Daily Research Paper Discussion Sessions - vishan.j@slit.lk; Kaushalya Rajapakse Subject: Re: Clarification on Daily Research	Jul 23
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Article on creating digital twins - Dear Ayeshmantha, Dhanushikan, This article provides a good overview of the process of developing a	Jul 14
<input type="checkbox"/>	☆	it21802058 Madhuwan.	Inbox	Fwd: Clarification on Simulation Scope Regarding GIS Metadata Integration - vishan.j@slit.lk - Dear Dr. Rajitha and Mr. Vishan, I hope this message finds you well. I'm writing to clarify an	Jul 6
<input type="checkbox"/>	☆	Rajitha De Silva 2	Inbox	Re: HeatScape Research Paper - vishan.j@slit.lk; Kaushalya Rajapakse Subject: Re: HeatScape Research Paper	Jun 30
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	RE: Draft Research Paper – HeatScape - vishan.j@slit.lk - Cc: Kaushalya Rajapakse Subject: Draft Research Paper – HeatScape	Jun 20
<input type="checkbox"/>	☆	Vishan, me 4	Inbox	RE: Quick Clarification on Research Paper Scope - vishan.j@slit.lk - wrote: > Dear Ayeshmantha, > > I'm ok, can you kindly check with Dr. Rajitha? If so	May 27
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Canceled: Heat Island Research Meeting - On campus - Cancelling due to new year holidays.	Apr 11
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Canceled: Heat Island Research Meeting - On campus - Disclaimer : This email and any attachment transmitted herewith are confidential and is intended	Apr 3
<input type="checkbox"/>	☆	Vishan Jayasinghear. 2	Inbox	RE: Heat Island Research Meeting - On campus - vishan.j@slit.lk; Kumara BDAN it21256264 ; Silva.GMSS it21802126 -it21802126	Mar 10
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Canceled: Heat Island Research Meeting - On campus - Dear all, I will be on leave tomorrow. Instead, I can give you time on Tuesday (11th March) around	Mar 5
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Canceled: Heat Island Research Meeting - On campus - Disclaimer : This email and any attachment transmitted herewith are confidential and is intended	Feb 20
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Heat Island Research Meeting - On campus - Time updated as discussed. Disclaimer : This email and any attachment transmitted herewith are	Jan 21
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	RE: Regarding the charter document - vishan.j@slit.lk - Cc: Kaushalya Rajapakse Subject: Regarding the charter document	Jan 6
<input type="checkbox"/>	☆	Vishan Jayasinghear.	Inbox	Heat Island Research Meeting - On campus - Disclaimer : This email and any attachment transmitted herewith are confidential and is intended	Jan 3
<input type="checkbox"/>	☆	Vishan Jayasinghear. 2	Inbox	Re: Checking Availability on the 18th - https://www.epa.gov/heatislands/learn-about-heat-islands Best regards, Vishan Jayasinghearachchi From	11/18/24

Figure 31: Emails 4

6. Gallery



Figure 32: Validation Testing 1



Figure 33: Validation Testing 2



Figure 34: Validation Testing 3



Figure 35: Final Presentation Completed