MCAST

DISSERTATION SUPERVISION LOGBOOK

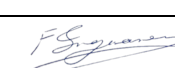|	
Institute	Information and Communication Technology
Programme	Software Development
Dissertation Title	Research on Remote Sensing Applications in Malta
Supervisor	Mr Frankie Inguanez
Student	Mr Massimo Darmanin
Student ID No	0277596M

Note

I. It is the **student's responsibility** to ensure that this logbook is correctly documented and maintained, and that Supervisor recommendations and signatures are acquired after each and every meeting.

II. This logbook is to be submitted together with the dissertation.

III. The institute reserves the right **to not accept** the student's dissertation for evaluation if this logbook is **not filled in correctly** and **duly signed** by the student and supervisor as indicated.

Meeting Number : 01	Date of meeting : 08/10/2021

Issues discussed at the meeting (*to be filled in by Student*)

TODO

Supervisor recommendations (*to be filled in by Supervisor*)

1 - Revise the code and work, will check to debug the visualisation

2 - Obtain data for months of March, April, May for years of 20117-2021

3 - Create a git repository and share with me (mcast email)

Date of Next Meeting	Student Signature	Supervisor Signature
15/10/2021		*F.Sngnanon*

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Meeting Number : 02	Date of meeting : 15/10/2021

Issues discussed at the meeting (*to be filled in by Student*)

- **Repository**
- **Official Documents**
- **Dataset**

Supervisor recommendations (*to be filled in by Supervisor*)

- Thanks for repository
- Check official documents
- Well done on dataset gathering. Complete to have also for 2017 (2017-2021). Start identifying which products have Malta without clouds.
- Python environment and setup ready
- For next week we shall focus on R code to identify issue and fix. Then start migrating to python.
- Identify articles over the study period, to find situations when extreme weather (hot or cold) was reported for a specific month. Our research shall investigate whether the same observations can be made, and whether a contribution can be made.
- Research any publication/article that argue that urban areas are hotter than rural. We can consider a study of the land temperature difference between the rural and urban zones in Malta (& Gozo).

Date of Next Meeting	Student Signature	Supervisor Signature
29/10/2021		

Meeting Number : 03	Date of meeting : 29/10/2021

Issues discussed at the meeting (*to be filled in by Student*)

Progress update

Supervisor recommendations (*to be filled in by Supervisor*)

Well done on script to index products
Well done on downloading 2017 products yet double check to confirm that they are working properly
Download SNAP and QGis
Follow the tutorial here and visualize LST and Clouds layers in QGIS for Malta. Remember to reproject CRS to 4326 both in SNAP and in QGIS. https://www.youtube.com/watch?v=GbQOZJC6Jgc
Attempt to use the script used so far, to reproject product, extract cloud_in layer and export to visualize.
This will allow you to determine if clouds are present or not.
Well done on finding articles documenting events of extreme heat or cold.

Date of Next Meeting	Student Signature	Supervisor Signature
22/11/2021		

Meeting Number : 04	Date of meeting : 22/11/2021

Issues discussed at the meeting (*to be filled in by Student*)

Progress Update
Bug Fix
CSV To do

Supervisor recommendations (*to be filled in by Supervisor*)

Continued to download more data.
Consider the .transpose() method for the pandas dataframe.
Consider exporting all data in a csv containing date, longitude, latitude and temperature.
Focus on literature review.

Date of Next Meeting	Student Signature	Supervisor Signature

Meeting Number : 05	Date of meeting : 16/12/2021

Issues discussed at the meeting (*to be filled in by Student*)

Overleaf
Write-up sequence

Supervisor recommendations (*to be filled in by Supervisor*)

Fixed overleaf sharing of template. Start drafting, will assist if errors and warnings arise.
Recommended sequence of write-up is: lit rev, res meth, disc of res, con, int, abs
The focus of your lit rev should not be on what the satellite is and how it works but rather on how it is being used for research purposes and to the general benefit. You can assume that the reader has a base knowledge on the subject matter, if not they are responsible to gather that information from sources other than your dissertation.

Date of Next Meeting	Student Signature	Supervisor Signature

Meeting Number : 06	Date of meeting : 11/01/2022

Issues discussed at the meeting (*to be filled in by Student*)
Progress update
Citations

Supervisor recommendations (*to be filled in by Supervisor*)

Ok no problem on lack of progress due to assignment, I understand. Make sure to resume and give focus in February.

In regards to citations use citep command to enclose citation in parenthesis. The cite command does not enclose in parenthesis. The difference is that citep is silent, meaning, the reader would not pronounce the citation, the cite command means that the reader would pronounce the citation as part of the paragraph/sentence to be read.

Date of Next Meeting	Student Signature	Supervisor Signature

Meeting Number : 07	Date of meeting : 07/02/2022

Issues discussed at the meeting (*to be filled in by Student*)

Progress update
Literature Review

Supervisor recommendations (*to be filled in by Supervisor*)

Ok, no problem on limited progress. Important to focus more on dissertation from now on.
Literature Review: the NDVI and NDBI sections should be moved to the research methodology. For now add content to the literature review, we shall then focus on the ideal format and structure to adopt.

Date of Next Meeting	Student Signature	Supervisor Signature

Meeting Number : 08	Date of meeting : 14/02/2022

Issues discussed at the meeting (*to be filled in by Student*)

Progress update
Literature Review, Research Methodology
Bug fix

Supervisor recommendations (*to be filled in by Supervisor*)

The purpose of a literature review is to document what 3rd party researchers have done and not what you did in this research.
The research methodology should contain the research hypothesis, research questions, research pipeline and the research methods adopted.
Use recommended bug fix to progress.

Date of Next Meeting	Student Signature	Supervisor Signature

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Meeting Number : 09	Date of meeting : 21/02/2022

Issues discussed at the meeting (*to be filled in by Student*)

Progress update
Literature Review, Research Methodology
Code review

Supervisor recommendations (*to be filled in by Supervisor*)

Well done on literature review progress. When ready with draft will review. Use \enquote command for double quotes, for blogs use footnote and url.

Find the correct CRS function for cartopy not OSNI but most probably check for EPSG 4326. Confirm that satellite product is projected to that CRS.

Date of Next Meeting	Student Signature	Supervisor Signature

Meeting Number : 10	Date of meeting : 07/03/2022

Issues discussed at the meeting (*to be filled in by Student*)

Progress update

Supervisor recommendations (*to be filled in by Supervisor*)

As a research design, we are doing a qualitative form of research, more specifically action research. Consider the following sources: https://yuli-elearning.com/pluginfile.php/4833/mod_resource/content/1/2.%20qualitative%20research%20design.pdf
https://www.fivevidya.com/blog/action-research-vs-case-study-know-the-key-difference-between-two-qualitative-research-methods/
We cannot do in-situ observations, rather we use historic weather data from weather stations for what is called calibration of our data. Use https://www.wunderground.com to check the temperature for key locations on key days of specific months for 1 year. Do a similar data gathering via satellite. Then determine how the values correlate.

Date of Next Meeting	Student Signature	Supervisor Signature

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Meeting Number : 11	Date of meeting : 14/03/2022

Issues discussed at the meeting (*to be filled in by Student*)

Progress update

Supervisor recommendations (*to be filled in by Supervisor*)

Some general guidelines on literature review.

Date of Next Meeting	Student Signature	Supervisor Signature

Meeting Number : 12	Date of meeting : 21/03/2022

Issues discussed at the meeting (*to be filled in by Student*)

Progress update

Supervisor recommendations (*to be filled in by Supervisor*)

Found fix to have snappy working. Follow recommended video tutorial and provided installation script. Checked that python scripts works.

Will review literature review and provide feedback.

Date of Next Meeting	Student Signature	Supervisor Signature

Meeting Number : 13	Date of meeting : 28/03/2022

Issues discussed at the meeting (*to be filled in by Student*)

Progress update

Supervisor recommendations (*to be filled in by Supervisor*)

Good progress. Keep unrecognized words for now and will address later. Note that the range from SNAP is smaller than SNAPPY, all you need is to change the colour range for it to match.

Date of Next Meeting	Student Signature	Supervisor Signature

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Meeting Number : 14	Date of meeting : 02/05/2022

Issues discussed at the meeting (*to be filled in by Student*)

Progress update

Supervisor recommendations (*to be filled in by Supervisor*)

Established that shape file was incorrect. Recreated the environment setup. Keep the file. Created a correct Malta Shape File for cropping. Established that GeoTiff creation has wrong orientation and CRS. Therefore consider reproject (might need subset/resample).

Date of Next Meeting	Student Signature	Supervisor Signature
		F. Engracias

Meeting Number : 15	Date of meeting : 09/05/2022

Issues discussed at the meeting (*to be filled in by Student*)

Progress update

Supervisor recommendations (*to be filled in by Supervisor*)

Use the link provided to reproject in bulk. Generate data in CSV. Then group Malta in regions (North, South, East, West) or as discussed.

Date of Next Meeting	Student Signature	Supervisor Signature
		F. Engracias

Meeting Number : 16	Date of meeting : 16/05/2022

Issues discussed at the meeting (*to be filled in by Student*)

Progress update

Supervisor recommendations (*to be filled in by Supervisor*)

Good progress. Proceed with reprojecting of all products, creation of 5 regions and extraction of temperature and NDVI for each region for each product. Investigate the mentioned research question.

Date of Next Meeting	Student Signature	Supervisor Signature
		F. Engracias

Meeting Number : 17	Date of meeting : 24/05/2022

Issues discussed at the meeting (*to be filled in by Student*)

Progress update

Supervisor recommendations (*to be filled in by Supervisor*)

Use 3 shapefiles to split Gozo+Comino, West Malta, East Malta. Consider setting the cloud_no_visible manually. Then extract data points for each product for each location and work out correlation between LST and NDVI

Date of Next Meeting	Student Signature	Supervisor Signature

Meeting Number : 18	Date of meeting : 30/05/2022

Issues discussed at the meeting (*to be filled in by Student*)

Progress update

Supervisor recommendations (*to be filled in by Supervisor*)

Recommended use for calculation of correlation. Recommended inclusion of line graph, yet revising to show only available data and not a straight line in absence of data.

Date of Next Meeting	Student Signature	Supervisor Signature