PROJECT MANAGEMENT DOCUMENTATION  
  
Task Management

The missions were divided like this:

Sam Grieveson – Solution Design, Solution Testing

Gabriele Kvedyte – Baseline Implementation, Ethical Evaluation

Jake Garnett – Project Ideation, Mathematical Review

Dominykas Baniulis – Project Management, User Interface

Team members themselves chose the tasks they wanted to do hence there were no long discussions as to who should take what tasks. The main missions were divided among the members first, then members who only had picked one mission took side missions. Side missions were chosen by what seemed the most needed for this project. Ethical Evaluation was chosen because the project deals with health issues which results in need of discussion of ethicality of this project. Mathematical Review was chosen because the project’s idea is quite difficult and needs to be as accurate as possible and a mathematical review would help to figure out what is going on and what could be done. User Interface was chosen as the software would be used by doctors it needs to have a clear and easy to use user interface so that the users would not be confused how to use it. As mentioned before, the members chose the missions themselves and their decisions that they could handle the tasks was trusted.

The main missions are prioritized as it seems the most logical way to complete the project on time. Project Management is a task that is being carried throughout the whole project while other tasks have a place in sequence the missions are being completed by. The order in which main missions were hoped to be completed is: Project Ideation -> Solution Design -> Baseline Implementation -> Iterative Development -> Solution Testing. While the side missions seemed to be possible to be completed at different stages of the project.

Risk analysis

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| --- | --- | --- | --- | --- | --- | --- |
| Risk | Description | Probability | Impact | Severity | Loss size | Prevention method(s) |
| Incorrect Model Selection | Poor selection of the model might affect the accuracy of skin cancer prediction. | Medium-High (60%) | High | High | Up to two weeks | A thorough research of models used in the same field must be made. |
| Lack of coding experience | Lack of coding experience team members may have could delay the implementation of the model or pre-processing steps. | Medium-Low (30%) | Medium-Low (40%) | Low | Up to 5 days | More time spent on researching code used in similar projects and learning to code. |
| Long training time of the model | The training time of the model taking more time than expected thus shortening the time left for other tasks left to complete. | Medium (50%) | Medium-High (60%) | Medium | Up to Few days | Proper planning and research done to optimize time spent on the tasks |
| Inaccuracy | The model turns out to produce inaccurate results | Medium (50%) | Very High (100%) | Very High | Up to 7 days | Starting the development as soon as possible to leave more time for testing.  Applying the necessary pre-processing steps  Test the model on other publicly available datasets |
| Advanced pre-processing step implementation | Advanced pre-processing sabotaging the accuracy of the model | Medium (50%) | Medium-High (60%) | Medium | Up to 2 days | Getting rid of the pre-processing steps, continue training the model without them |
| Not completing the project | The project is not complete before the deadline | Medium (50%) | Very High (100%) | Very High | - | Planning of time while taking into the account issues that my arise while working on the project |
| Member missing | A member gets sick or has another very serious issue and cannot participate in most parts of the project | Medium (50%) | Medium High (60%) | Medium (50%) | - | - |

Master Schedule

The initial schedule was:

* 5 days for research of the best possible model (deadline: 13/04/2021)
* 2 weeks for implementation (deadline: 27/04/2021)
* 2-4 days for the user interface (deadline: 01/05/2021)
* 1 week for testing (deadline: 06/05/2021)
* 3 days for the presentation (deadline: 09/05/2021)

However, due to unforeseen issues, the schedule had to be re-done as to accommodate to the problem that arose. Some tasks had been already completed so they were not included in the final schedule is:

* Deadline for baseline implementation 04/05/2021
* Deadline for iterative development 12/05/2021
* Deadline for solution testing 19/05/2021
* Making sure all missions are done and the project is ready for the presentations till 26/02/2021

Progress Report

Meeting Logs:  
The meetings took place via communication app “Discord” as it was easy to log group meetings and follow any updates team members may have said/uploaded.

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| --- | --- | --- |
| Meeting date: | Attendance list: | Topics and Accomplishments: |
| 19/02/2021 | * Dominykas * Sam * Jake * Gabriele | * Decision on what software the team wants to and is planning to build. * Some details of the project, such as AI model that is capable of skin cancer diagnosis based on images and user interface to accompany the model. * Missions were assigned according to each member’s wishes. |
| 16/03/2021 | * Dominykas * Sam * Jake | * Code of conduct was initialized and finalized. * Brief contents of the code. * Agreements on how the meetings will take place, how the conflicts will be disputed and how project related materials will be shared, stored, and developed. * What is expected of each member of terms of their behaviour and in terms of contributing to the final project. |
| 23/02/2021 | * Dominykas * Sam * Jake * Gabriele | * Final dataset that is to be used in the project. Proposed datasets were: The ISIC 2020 Challenge Dataset, Skin Cancer MNIST: HAM10000, PH2 Dataset, and Anti-PD-1 Immunotherapy Melanoma Dataset. * Agreement on using the ISIC 2020 Challenge Dataset as it is provided by Kaggle, a well-established online data science community, as well as the images are already somewhat ready for the training and the dataset is divided into training and testing sets. |
| 08/04/2021 | * Dominykas * Sam * Jake * Gabriele | * Doubts that had arisen if whether the chosen deep learning model (ResNet) is certainly superior to machine learning models, as the project ideation compares ResNet to other certainly convolutional neural networks (CNNs). * Decision to spend the following 5 days for further research was made. |
| 19/04/2021 | * Dominykas * Sam * Jake | * Agreement on what basic data pre-processing steps to take, such as image resizing which is needed in case the input images differ in size, and image pixel value normalization for the model to train more efficiently. * Decision to spend more time to research additional data augmentation methods was made. * The development environment was established. Kaggle notebooks was chosen as Kaggle hosts the dataset used for the final project. This way the team does not have to manually download the large dataset, and everything is set up for the convenience. |

Progress Logs:

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| --- | --- |
| Date: | Progress: |
| 16/02/2021 | * The project field has been decided – medical field. |
| 19/02/2021 | * Final decision on what software the team will be making has been made – software that helps to diagnose skin cancer. * Place to store all of the documents has been made on Google drive. |
| 03/03/2021 | * GitHub repo for the team has been made |
| 08/04/2021 | * The deadlines for different tasks have been set |
| 15/04/2021 | * Decision to use ResNet 100 has been made |
| 29/04/2021 | * Code for the Baseline Implementation has been written |
| 02/05/2021 | * Suggestions to use different ResNets, such as ResNet 152 and ResNet 50 |
| 17/05/2021 | * Suggestion to set the images to 256 x 256 |
| 18/05/2021 | * Suggestion to focus on ResNet 150 |