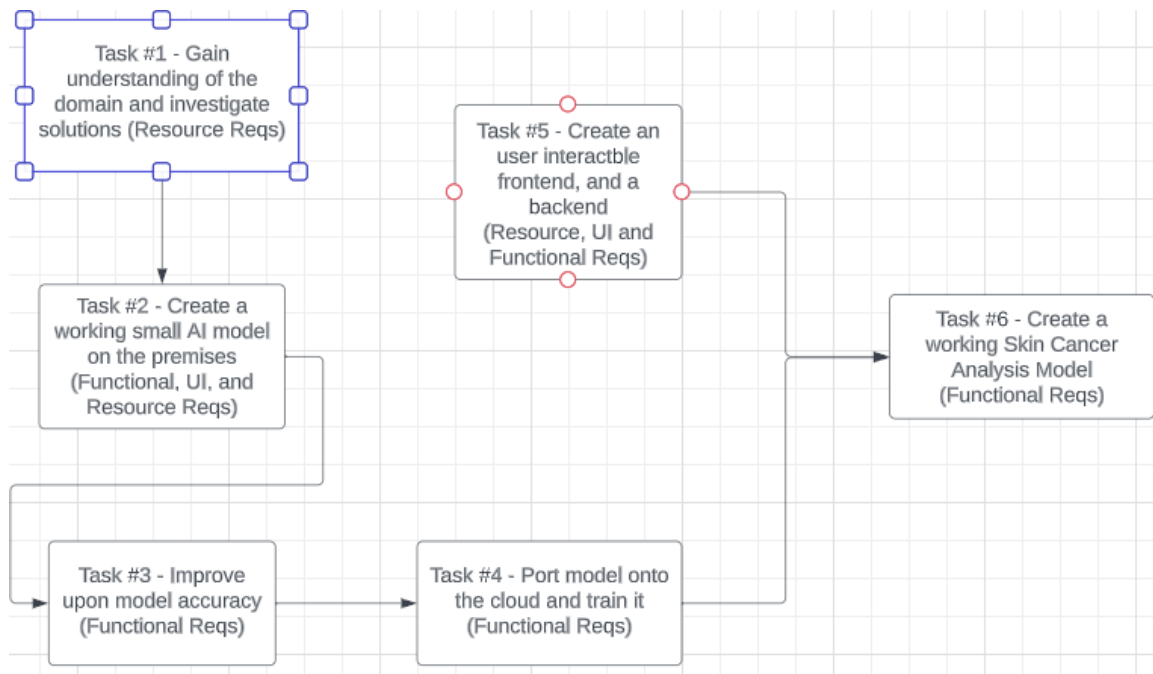


2 Project Plan

2.1 TASK DECOMPOSITION

In order to solve the problem at hand, it helps to decompose it into multiple tasks and subtasks and to understand interdependence among tasks. This step might be useful even if you adopt agile methodology. If you are agile, you can also provide a linear progression of completed requirements aligned with your sprints for the entire project. At minimum, this section should have a task dependence graph, description of each task, and a justification of your tasks with respect to your requirements. You may optionally also include sub-tasks.



https://lucid.app/lucidchart/c0275bao-1860-405d-8855-16ddbbee42/edit?view_items=a32A5n6O6d3z&invitationId=inv_c9ca914a-bf53-44cf-882c-40e168591782

2.2 PROJECT MANAGEMENT/TRACKING PROCEDURES

Which of agile, waterfall or waterfall+agile project management style are you adopting. Justify it with respect to the project goals.

What will your group use to track progress throughout the course of this and the next semester. This could include Git, Github, Trello, Slack or any other tools helpful in project management.

Our team has decided to use agile instead of waterfall for our project management. Most of our team members have had experience and are more comfortable with agile as well. With respect

to our project goals, agile is also the correct choice. Agile is more of a team-based approach to project management which will allow all of us to learn more about AI. Having designated sprints will also help keep the team on track and learning. In order to track our progress, the team will be using Github Issues. We can use them to track milestones, smaller priorities during sprints, what is in progress, and more.

2.3 PROJECT PROPOSED MILESTONES, METRICS, AND EVALUATION CRITERIA

What are some key milestones in your proposed project? It may be helpful to develop these milestones for each task and subtask from 2.1. How do you measure progress on a given task? These metrics, preferably quantifiable, should be developed for each task. The milestones should be stated in terms of these metrics: Machine learning algorithm XYZ will classify with 80% accuracy; the pattern recognition logic on FPGA will recognize a pattern every 1 ms (at 1K patterns/sec throughput). ML accuracy target might go up to 90% from 80%.

In an agile development process, these milestones can be refined with successive iterations/sprints (perhaps a subset of your requirements applicable to those sprint).

1. Training students on AI and cloud computing: 3-4 weeks
2. Introducing students to AI skin cancer practices as done by Mayo Clinic: 2 weeks
3. Starting a small AI model on premises: 4 weeks
4. Improving the model accuracy: 4-6 weeks
5. Porting the model on the Cloud and training it: 4-6 weeks

2.4 PROJECT TIMELINE/SCHEDULE

- A realistic, well-planned schedule is an essential component of every well-planned project
- Most scheduling errors occur as the result of either not properly identifying all of the necessary activities (tasks and/or subtasks) or not properly estimating the amount of effort required to correctly complete the activity
- A detailed schedule is needed as a part of the plan:
 - Start with a Gantt chart showing the tasks (that you developed in 2.2) and associated subtasks versus the proposed project calendar. The Gantt chart shall be referenced and summarized in the text.
 - Annotate the Gantt chart with when each project deliverable will be delivered
- Project schedule/Gantt chart can be adapted to Agile or Waterfall development model. For agile, a sprint schedule with specific technical milestones/requirements/targets will work.

week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Train on AI and cloud computing																			
Introduction to AI skin cancer practices																			
Gain knowledge about our domain and investigate solutions																			
Small AI model																			
Improve model accuracy																			
Port model to cloud and train																			

2.5 RISKS AND RISK MANAGEMENT/MITIGATION

Consider for each task what risks exist (certain performance target may not be met; certain tool may not work as expected) and assign an educated guess of probability for that risk. For any risk factor with a probability exceeding 0.5, develop a risk mitigation plan. Can you eliminate that task and add another task or set of tasks that might cost more? Can you buy something off-the-shelf from the market to achieve that functionality? Can you try an alternative tool, technology, algorithm, or board?

Agile projects can associate risks and risk mitigation with each sprint.

1. Difficulty transferring AI model to the cloud - 0.3
2. The training for our AI could be off resulting in bad outputs - 0.5 - We would prevent this by starting with smaller models to prevent time being wasted if the model was trained incorrectly.
3. Slow performance - 0.3
4. Refactor UI code - 0.1

5. Difficulty understanding some of the tools - 0.2
6. Not reaching the desired level of accuracy - 0.4

2.6 PERSONNEL EFFORT REQUIREMENTS

Include a detailed estimate in the form of a table accompanied by a textual reference and explanation. This estimate shall be done on a task-by-task basis and should be the projected effort in the total number of person-hours required to perform the task.

Task	Projected Effort	Reference
Learn AI and Cloud Computing	20hr total	Learning the AI will take some time commitment to understand the software and coding required for the project
Acquire the Datasets	4hr total	
Set Up Model Environment	2hr total	
Create and train AI Model	8hr total	
Test the AI Model	12hr total	We need to commit enough time to making sure the model works as intended and to find any flaws
Improve Model Accuracy	12hr total	It may take some time to improve the models
Create Model UI	10hr total	We will write the code necessary for a web application

2.7 OTHER RESOURCE REQUIREMENTS

1. An AI model to base our own on. We will use Keras.io for this.
2. A dataset to train the model with. We will need to find an open source image dataset to use. This will be found from ISIC.