Objectives and aims

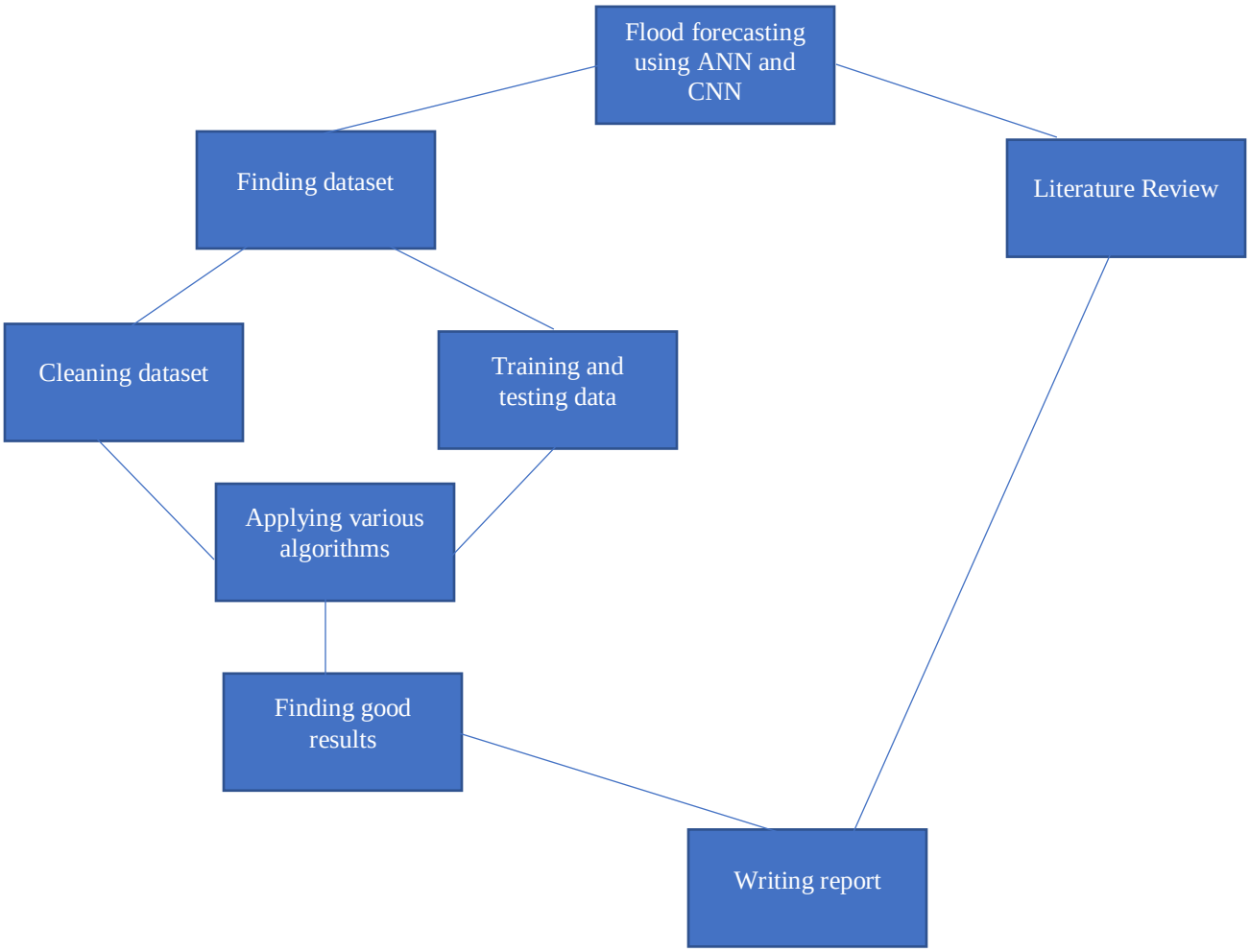
This Project is about flood forecasting in the mountainous regions specifically focused on Gilgit-Baltistan, Pakistan. We recently witnessed a disastrous flood in overall Pakistan and in many other places around the world. In Gilgit-Baltistan many people lost their lives in the recent flood. Peoples' houses were completely swiped away and their properties such as lands, trees etc are completely damaged. The aim of this project is to reduce such damages by telling people when the flood can happen. If we can predict the flood, then we will be prepared accordingly, and the loss can be reduced to a greater extent.

SMART (Specific, Measurable, Achievable, Relevant, Time-bound)

The topic chosen for this project is very specific as it is focused on the flood forecasting in Gilgit-Baltistan using Machine Learning and Deep Learning techniques. It is measurable as I know how, when, and what to do. First, I will find dataset, research on it, and then I will apply Machine Learning models. Lastly, I will conclude and write a report. This project is also achievable as I will follow all the procedures. This topic is very relevant, and it can be used as final year project. Moreover, it can be done in the given time frame.

Six steps of planning

1. **Work breakdown**



2. **Time estimates**

Dataset finding (2 weeks)

Data cleaning (2 week)

Literature review (4 weeks)

Data training (2 weeks)

Data Testing (2 weeks)

Applying ANN and CNN (3 weeks)

Writing report (4 weeks)

3. **Milestone identification**

   I am planning to this project in 7 milestones as described in the time estimates section.

4. **Activity sequencing**

   I will do the tasks like Dataset finding → Data cleaning → Literature review → Data training → Data Testing → Applying ANN and CNN → Writing report

5. **Scheduling**

   I have started working on the project and hopefully I will complete it by January.

6. **Re-planning**

   I will go through my plan again and again to ensure that all the things going according to my plan.

Risk Management

1. **Identify Risks**

   There might be two types of risks: technical and non-technical risks. Technical risk is usually related to the software and hardware. For instance, my laptop might get crashed or I might lose all the data from my laptop due to some reasons. Non-technical risks may include professor leaving the university or he/she might not be happy with me or my work.

2. **Asses the impacts of risks**

These risks may be very little dangerous, dangerous, or very dangerous. In case of losing some of my data is not a big issue, but if I lost my whole data then it is very dangerous for me. Moreover, if my supervisor is not happy with me then it will also create potential threats.

3. **Alleviate critical risks**

   I can alleviate the technical risks by uploading my all the data onto a cloud-based server. For that I am committing everything on time-to-time basis in my GitHub account to avoid any potential threats. I am uploading all the data related to my final year project into my GitHub account. This will also help the external committee to assess my work and they will come to know that the work is done by me. I must visit my supervisor on weekly basis to discuss the improvement and other related issues. I must also have a friendly relation with my supervisor in order to avoid any misunderstandings.

4. **Controlling risks**

   As I have described in the earlier section, I must take safe steps to avoid any sort of risks. I must do things carefully to avoid any sort of issues.