# Daniel Jameson T00158237

## But where does AI factor into all this? And it will have to lmao.

This document is going to detail the technology used to make the “Missing Person Rescue” project. The technology in this project is going to mainly be graph theory and algorithms to identify areas that a missing person may potentially go if they get lost from a certain location.

As a working example, I am going to take a nearby mountain. Carrauntoohil would be a nice reference to use for this. The area is going to need to be mapped and the most dangerous areas identified. Obtaining this data could be a difficult task as the data on the area is sparse. The “Devils Ladder” for example, would be a highly prioritised area as it has many rough rock formations that may cause someone to fall and hurt their leg. From the information gained, you could use Graphs to devise a search area that would give priority to these areas.

### GUI application programming.

This application would need a GUI to insert the data where the person may have potentially gone missing. To fit the theme of the project, I may decide to use either C++ or Java as my preferred language. C++ would be a good candidate because it prioritises speed and performance over ease of use. Java would be a good candidate because I am already familiar with Graphs and programming in this already. From a Professional Development perspective, I want to try something new, so I am currently leaning towards C++.

## What kind of Data is required?

### What Kind of Data would be useful about the subject needing rescue.

Certain data about the missing person would have to be ascertained to gather the list of their possible locations. The most important would be the approximate location before they got lost, you could use certain data about the person in question to gather how far they may have travelled, fitness etc. This could be where AI comes into the project. You could use picture data to gather approximate fitness levels.

## Terrain Data.

Data on areas that need to be searched can be gathered using a combination of different potential techniques. Photogrammetry could be used to assess the mountain. This would be a difficult method as it is time consuming and expensive. A special map could be made combining the information gained from several different map types, and here is a useful link from Atlas.com that details different map types.

Photogrammetry on a mountain: <https://www.youtube.com/watch?v=gdd31rgS1q8> Nice idea, but would be prohibitively expensive for a project. This could also be an area where AI may factor into assessing the 3d model from the photogrammetry scan.

<https://www.worldatlas.com/articles/what-are-the-different-types-of-maps.html>

Physical Map, Geologic Map, Topographic Map.

Useful references/links:

Kerry Mountain Rescue: https://kerrymountainrescue.ie/carrauntoohil-route-descriptions/ - This site possesses images and basic maps that may be of use when finding areas that may be particularly dangerous. Also comes with useful advice on navigation and such. This website also contains map data where “special care is required”.

# # To-Do list:

* Make a git/github repository for the project. Do this tonight.
* Make outline of document. README file etc.
* Slides in review folder before Thursday class.
* Send email to Kerry Mountain Rescue.
* Anglia / ?Ruscan? method of citations and references.
* I’d consider it to be bad practice to link a paper and not cite what page it came from. Nobody is going to read a whole paper to find one or two lines.

## Kerry Mountain Rescue Questions and answers.

If meeting with them directly, maybe record meeting so you don’t forget.

Q. How do they gather data on the terrain of the mountains?

Q. Would a navigation system be of help to them?

Q. What areas of mountain etc. need to be paid special attention to?