


Ideation Phase

Brainstorm & Idea Prioritization

Date	17 October 2022
Team ID	PNT2022TMID45200
Project Name	VirtualEye - Life Guard for Swimming Pools to Detect Active Drowning
Maximum Marks	4 Marks

Brainstorm & Idea Prioritization:


Template



VIRTUL EYE

Brainstorm & idea prioritization

In this session we aim to achieve a good base for beginning our project with clear understanding of the task in hand, the next step would be to collectively put in our thoughts/ imagination and end with a proper feasibility study



Ground Rules

- Be Creative
- Rule out every possible ideas and improvements
- Make your points clear and purposeful
- Don't hesitate
- Arguments are good

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1

Choose your best "How Might We" Questions

Share the top 5 brainstorm questions that you created and let the group determine where to begin by selecting one question to move forward with based on what seems to be the most promising for idea generation in the areas you are trying to impact

PROBLEM 1

How might we detect and differentiate active drowning with the least possible error rate?

PROBLEM 2

How might we automate the alert systems so as to provide crucial states and into the rescue team

PROBLEM 3

How might we optimized the detection algorithm to yield results in the least time?

PROBLEM 4

How might we being more privacy yet use camera for detection?

PROBLEM 5

How might we optimally use minimal hardware to get the most accurate information in an around the environment?

2

Brainstorm

Write down any ideas that come to mind that address your problem statement.

[10 minutes](#)

VEERASEKARAN.M

High level testing must be carried out before real world deployment

proper hyperparameters must be found for the model

Requires HD cameras for good quality frames to be processed

Underwater cameras a possible solution to detect humans under deep water

systemic and efficient algorithms to be followed

24/7 power supply is must for the system to run & report

SANTHANALAKSHMI.R

There should be manual alert system in case of detection failure

More cameras should be used to improve accuracy

The system should not annoy others

Cameras can be mounted on the bottom of floating boards for large swimming pools

The AI should be trained with more sample for better results

For privacy purpose the video stream should not be stored

SRIDHAR.J

Optimized feed transfer to achieve live relay will less BW to get the classifiable video of underwater footage

Ensuring the video feed is not being recorded or saved instead being used only for detection which is later discarded

Able to process absolute drowning and also altering the rescue team of passive possibilities as a probable instance

setup an ACS and suggestive ways to ensure the information reaches in one or more ways as this deals with critical life saving situation

Using alternative source of energy such as solar to make a green system but making sure to always have backup supply

Having considered the metrics and variance of different age groups and also different swimming environment both controlled and lessure

THILAGA.A

The network connectivity should be good for faster alert transmission

Use powerful algorithm to get trained from various datasets

power backup should be there in case of power cut.

AI should be trained in such a way that it should detect multiple drowning

What happens if animals were encountered in the pool?

Cameras should be maintained properly for good results

3

Brainstorm as a group

I have everyone move their ideas into the 'group sharing space' within the template and have the team silently read through them. As a team sort the group them by thematic topic or similarities. Discuss and answer any questions that arise encourage 'Yes and' and build on the ideas of other people along the way

⌚ 20 minutes

4

Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

⌚ 20 minutes

5

Decide your focus

Give each person two icons to vote which ideas should your team focus on & assign the roles & responsibilities

VEERASEKARAN
Backend and integration on

SANTHANLAKSHMI
Backend and ML

SRIDHAR
Frontend and Design

THILAGA
UI/UX

What's Next...

- Plan and code an efficient model and train it with the correct hyperparameters to produce a probable and accurate result.
- Consume with the solution that is minimal, probable, less intrusive and cost effective.

privacy

Ensuring the videos feed is not being recorded or saved instead being used only for detection which is then discarded

For privacy purpose the video stream should not be stored

User Perspective

Make sure the stakeholders know how the system works and understand the possibility for systems work

The system should not annoy the swimmers

Power

24/7 power supply and power backup must for the system to run & report proper alerts to rescue team

Using alternative source of energy such as solar to make a green system but making sure to always have backup supply

Features

Having retro reflective indicators given to children and novices and touching them signals to make the drowning detection easy

Having an integration with fitness band companies to get vital states of a swimmer to have better information and predict possibilities of a drowning incident

Will the system detect properly if the pool is cluttered?

Cameras & Hardwares

Cameras should be maintained properly for good results

System should detect multiple drowning and should report the same

Network & Connectivity

The network connectivity should be good for faster alert transmission

Optimized feed transfer to achieve live relay will less BW to get the clear HD video of underwater footage

AI & ML

Proper hyperparameters must be found for the model

The AI should be trained with more samples for better results

AI should be trained in such a way that it should detect multiple drowning

