Image Processing

General Rules:

- Each team can have a maximum of 4 participants.
- There is no restriction on batch for students. A team can have members from different batches.
- The organizers reserve the right to change the rules as they deem fit.
- When a team is called for match, they must report within five minutes.
- Judges decision will be final.
- The arena shown is just for reference.
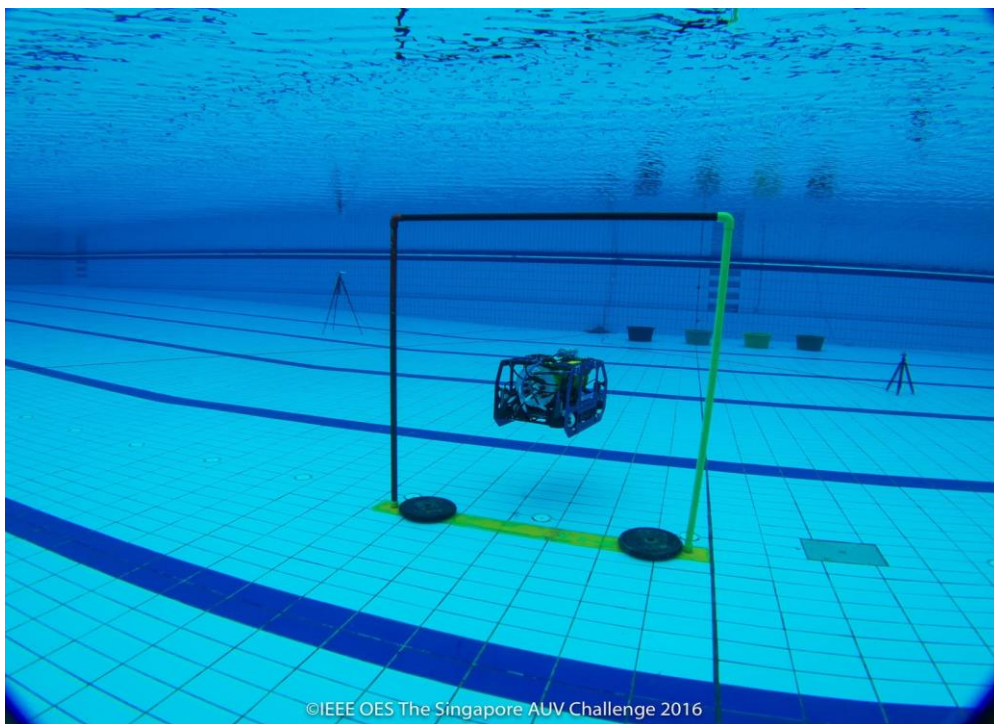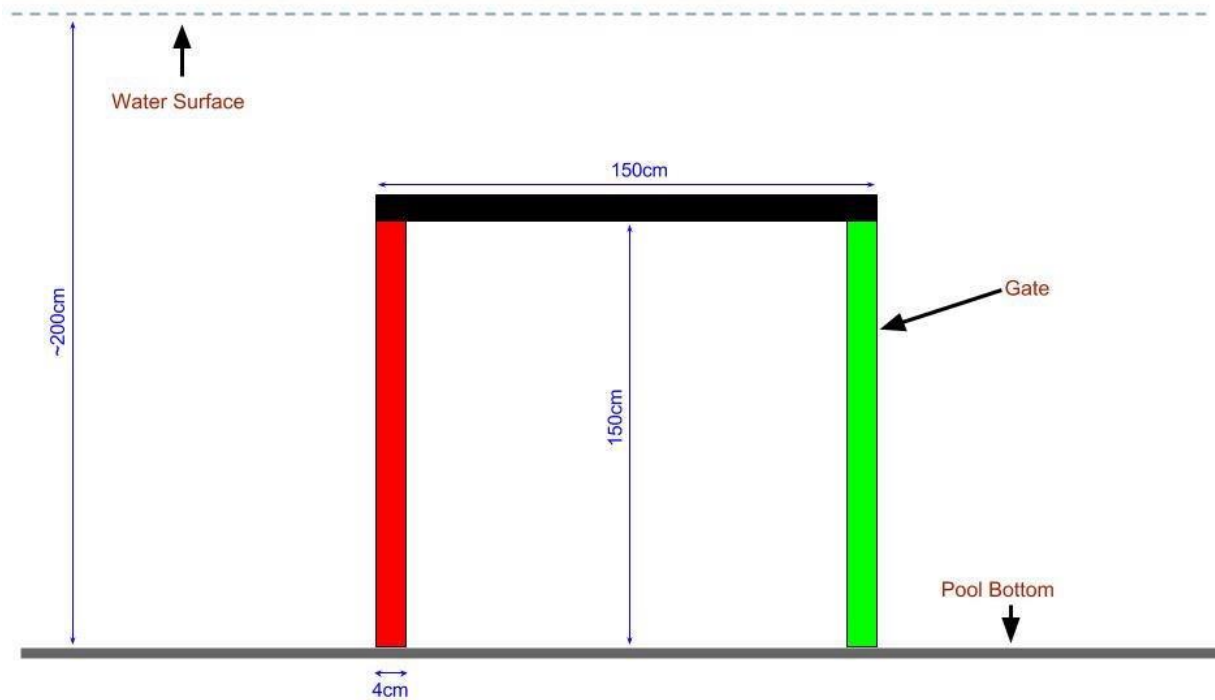
Event Structure:

An abstract submission by all participating teams will be required by **20th October 2017 11:59 pm.** The abstract should cover the following aspects:

- Team Name/ Team Leader's name/ Team Leader's contact information/ Team Members Details
- Introduction (approach to the problem statement) ~ 50 words
- Pseudo Code (Describe the algorithm you will be using. Also include your INNOVATION (if used) i.e., how is your algorithm is different from a conventional one) ~ atleast 50 words , If used.

Based on the abstract, selected teams will have to submit their code by **2nd November 2017 11:59 pm**.

Gate Specifications:

150cm wide and 150cm high gate with red and green markings on port and starboard sides respectively.

Water Surface

150cm

~200cm

150cm

Gate

Pool Bottom

4cm

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Problem Statement:

You are working on an autonomous underwater vehicle which is navigating underwater avoiding obstacles and achieving targets. In the navigation there comes a gate of which you know the dimensions and color. Bot must pass through it without touching it in order to complete the mission.

1. You have to write code for detecting the gate and to know its center in order for the bot the pass through it.
2. You will get the raw images from the camera and you'll have to perform image processing on it and get the results.
3. Hint : Get rid of the too much information that you see. And focus on the most important aspects of the image.

Judging Criteria:

1. There is no compilation error. (10 points)
2. There is no run-time error. (10 points)
3. Detecting the gate. (50 points)
4. Getting the center of the gate correctly. (50 points)
5. Showing center on the screen. (20 points)
6. Forming a rectangle around the detected gate. (20 points)

▸ The judges can ask for an explanation of any code block and there would be an immediate disqualification of defaulters of any kind.

Prizes:

▸ Will be declared on website shortly