
**North South University**
**Department of Electrical and Computer Engineering**

**Senior Design Project**

# Submersible Search and Rescue Operation ROV

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## DECLARATION

We, hereby, declare that the work presented in this report is the outcome of our four months work performed under the supervision of Tanjila Farah, Department of Electrical and Computer Engineering, North South University, Dhaka, Bangladesh. The work was spread over a span of one of the final year course, EEE 499A, Senior Design Project, in accordance with the course curriculum of the Department for the Bachelor of Science in Electrical and Electronics Engineering program.

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# APPROVAL

The senior project report on 'Submersible Search and Rescue Operation ROV' has been submitted by Tanveer Chowdhury Shuvo (ID#1512220643), Mahboob Liaquat (ID#1931261043), Sha md. Nafiz Imtiaz (ID#1811535643), Shimum Shaharia (ID#1620210643) students of the Department of Electrical and Computer Engineering, North South University, Bangladesh. This report partially fulfills the requirement for the degree of Bachelor of Science in Electrical and Electronic Engineering in December 2021 and has been accepted as satisfactory.

Supervisor's Signature

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## ACKNOWLEDGEMENT

First, we express our gratefulness to almighty ALLAH for His blessing which makes us possible to complete the project.

We are grateful and wish our profound indebtedness to Tanjila Farah, Senior Lecturer, Department of ECE, North South University, Dhaka. She had deep Knowledge & keen interest of our supervisor in the field of "Submersible Search and Rescue ROV Study" to carry out this project. Her guidance, constant supervision, enthusiastic encouragement, sagacious advice and an effective surveillance throughout the entire period of the project have made it possible to complete this project. We would like to thank our entire EEE 499A and EEE499B course mate in North South University, who took part in this discussion while completing the course work. At last we must express our sincere heartfelt gratitude to all the staff members of the Electrical and Electronics Engineering Department who helped us directly or indirectly during this course of work.

# ABSTRACT

This project is about a submersible search and rescue operation ROV that will help save lives in risk of drowning. Bangladesh is at 5$^{th}$ position of highest death due to drowning. The motivation for our project is that every day there are about 300 cases of fatalities all around the world reported in regards to victims of drowning according to experts. The proposed system is especially important in a country like Bangladesh, in which people of low-income reside and many lives are lost every year through drowning tragedies. So, an economic solution which is accessible to the general public to overcome this problem is of great importance. In our project we have used PVC pipes for the structural framework of the submersible ROV on which three 1400KV thrusters are mounted along with a high resolution camera to help with the visuals and a robotic gripper to grab onto the victim while they are pulled out of the water.



Keywords---Underwater, Submersible ROV, robotic gripper, thrusters, Arduino, SolidWorks, rescue, drowning, waterproof, camera, lipo battery, servo motor, tether.