**“Title”**

***A***

***Project Report***

*submitted in partial fulfillment of the*

*requirements for the award of the degree of*

**BACHELOR OF TECHNOLOGY**

**in**

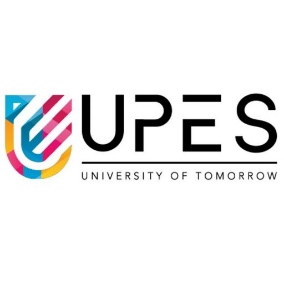
**COMPUTER SCIENCE & ENGINEERING**

**by**

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**School of Computer Science**

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**Month – 20XX**

**CANDIDATE’S DECLARATION**

I/We hereby certify that the project work entitled **“ <Title of Project>”** in partial fulfilment of the requirements for the award of the Degree of BACHELOR OF TECHNOLOGY in COMPUTER SCIENCE AND ENGINEERING with specialization in <SPECIALIZATION) and submitted to the Department of Systemics, School of Computer Science, University of Petroleum & Energy Studies, Dehradun, is an authentic record of my/ our work carried out during a period from **<Month>**, **<Year>** to **<Month>**, **<Year>** under the supervision of **<Guide Name(s), Designation and Affiliation>**.

The matter presented in this project has not been submitted by me/ us for the award of any other degree of this or any other University.

**(<Name of Student(s)>)**

**Roll No.----------------**

This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_2017 **(Name of Guide)**

Project Guide

**ACKNOWLEDGEMENT**

We wish to express our deep gratitude to our guide **Name**, for all advice, encouragement and constant support he/she has given us throughout our project work. This work would not have been possible without his support and valuable suggestions.

We sincerely thanks to our respected **Name of HoD,** **Head Department of \_\_\_\_\_\_\_\_\_\_\_\_\_,** for his great support in doing our project in **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

We are also grateful to Dean SoCS UPES for giving us the necessary facilities to carry out our project work successfully. We also thanks to our Course Coordinator, (NAME) and our Activity Coordinator (NAME) for providing timely support and information during the completion of this project.

We would like to thank all our **friends** for their help and constructive criticism during our project work. Finally, we have no words to express our sincere gratitude to our **parents** who have shown us this world and for every support they have given us.

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**ABSTRACT**

**“TSAR” – The Target Seeking Autonomous Robot** is a project which is going to deal with the complexity of collision avoidance, computational processing, localization, environmental sensing and target seeking.

An autonomous robot is a self-piloted machine that does not require a human intervention to accomplish its tasks. These robots are designed to perform desired tasks in unstructured environments without continuous human guidance.

The goal of the project is to design and build a low cost autonomous vehicle control system for a ground vehicle. The vehicle must be able to navigate through the predetermined route (desired destination) and avoid obstacles while maintaining an optimum speed and also restoration of the original path to reach its predefined destination successfully.

The demonstrator system uses **BOE-BOT**. The bots are initially placed at some position (which is the referred as Home Position hereafter) and a target (Destination Address hereafter) is given to them. Then the required processing is done and the predefined path is analyzed and fixed for locomotion.

The bots are programmed such that they can detect as well as avoid all the objects in their path and no collision occurs. Collision avoidance is achieved by using infrared sensors. Once the Bot goes out of the predefined path the Path Restoration Technique comes into action in order to reach its original destination.

One possible task of an autonomous vehicle is to navigate a pre-programmed route while avoiding any obstacles the vehicle may encounter. This function is useful in applications such as

* Surveillance Robot,
* Safety System,
* House hold robots
* Autonomous Moving Robot
  + In the Air
  + On road
  + Underwater

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1. **SYSTEM ANALYSIS**

**References**

**(As per their appearance in the chapters)**