



Senior Design Project

An Autonomous Surveillance Drone

Md. Jobayer Hossain Sourav	ID # 1430578042
Adnan Islam	ID # 1430575042
M Asif Ibna Azad	ID # 1430366042
Mohammad Al-Amin Hossain	ID # 1420212042

Faculty Advisor:

Mirza Mohammad Lutfe Elahi

Senior Lecturer

ECE Department

Spring, 2019

LETTER OF TRANSMITAL

May, 2019

To

Dr. K.M.A Salam

Chairman,

Department of Electrical and Computer Engineering

North South University, Dhaka

Subject: Submission of **Capstone Project Report** on “**An Autonomous Surveillance Drone**”

Dear Sir,

With due respect, we would like to submit our **Capstone Project Report** on “**An Autonomous Surveillance Drone**” as a part of our BSc program. The report deals with Autonomous Security System using Unmanned Arial Vehicle (UAV). This project was very much valuable to us as it helped us gain experience from practical field and apply in real life. We tried to the maximum competence to meet all the dimensions required from this report.

We will be highly obliged if you kindly receive this report and provide your valuable judgment. It would be our immense pleasure if you find this report useful and informative to have an apparent perspective on the issue.

Sincerely Yours,

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Md. Jobayer Hossain Sourav
ECE Department
North South University, Bangladesh

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Adnan Islam
ECE Department
North South University, Bangladesh

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M Asif Ibna Azad
ECE Department
North South University, Bangladesh

.....
Mohammad Al-Amin Hossain
ECE Department
North South University, Bang

DECLARATION

This is to certify that this Project is our original work. No part of this work has been submitted elsewhere partially or fully for the award of any other degree or diploma. Any material reproduced in this project has been properly acknowledged.

Students' names & Signatures

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Md. Jobayer Hossain Sourav
ECE Department
North South University, Bangladesh

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Adnan Islam
ECE Department
North South University, Bangladesh

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M Asif Ibna Azad
ECE Department
North South University, Bangladesh

.....
Mohammad Al-Amin Hossain
ECE Department
North South University, Bangladesh

APPROVAL

We, **Md. Jobayer Hossain Sourav (ID#1430578042)**, **Adnan Islam (ID#1430578042)**, **M Asif Ibna Azad (ID#1430366042)** and **Mohammad Al-Amin Hossain (ID#1420212042)**, members of **CSE499** (Senior Design) from the Electrical and Computer Engineering department of **North South University**; have worked on the project titled “**An Autonomous Surveillance Drone**” under the supervision of **Mirza Mohammad Lutfel Elahi** as a partial fulfillment of the requirement for the degree of Bachelors of Science in Engineering and has been accepted as satisfactory.

Supervisor’s Signature

.....
Mirza Mohammad Lutfel Elahi

Senior Lecturer

Department of Electrical Engineering & Computer Science

North South University

Dhaka, Bangladesh.

Department Chair’s Signature

.....
Dr. K.M.A. Salam

Professor

Department of Electrical and Computer Engineering

North South University

Dhaka, Bangladesh.

ACKNOWLEDGEMENT

By the mercy of the Almighty we have completed our senior design capstone project entitled “An Autonomous Surveillance Drone”. Foremost, we would like to express our sincere gratitude to our honorable advisor **Mirza Mohammad Lutfe Elahi** for his continuous support in our capstone project progress throughout the whole 499A and 499B, for his patience, motivation, enthusiasm, and immense knowledge. His guidance helped us in all the time of research, writing and completing of this project. Our sincere thanks also go to North South University, Dhaka, Bangladesh for providing an opportunity in our curriculum which enabled us to have an industrial level experience as part of our academics. Last but not the least, we would like to thank our family as their inspiration and guidance kept us focused and motivated.

Abstract

Drones have become very common these days in the entertainment field. People use drones to take amazing videos and pictures of landscapes. We have used this entertainment device in a more helpful way with which we can solve real world problems. Our drone has features such as surveillance, object detection and crowd detection. The main idea of our project is aimed to ensure precise and fast surveillance throughout a specified area using autonomous surveillance. It is aimed to be used for violence detection, law breakers and any other objection that pose a threat to the law. It scans all the places that CCTV cameras cannot cover and reports back live video feedback to the security personnel. Our work mainly aims to improve surveillance technologies and shape a secure compound. With the rise in security issues in the past decade, many people have resorted into unfair means of conduct. Also, with the rise of technology, it has become easier for law breakers to plan about an event without any security officials knowing about it. CCTV cameras are sometimes able to catch the intruders but, in most cases, due to the angle in which the camera is set to, many crimes go unnoticed. Our drone can detect any unwanted object or unauthorized person inside a given territory. Moreover, if there is any crowd which can pose a threat for the security concern, our drone can autonomously detect the crowd and send notification to the nearby security personnel.