

**Bangabandhu Sheikh Mujibur Rahman Science & Technology
University, Gopalganj-8100**



**Department of Electrical and Electronic Engineering
Project Proposal**

Making a Solar-Powered AI Camera Drone

Course No : EEE309

Course Title: Project

Submitted to:

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Submitted by:

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Date of Submission: 07/02/2024

Author Name: Razowan Kabir

Manager Name: Pantho Mandol

Project Proposal Type: Drone Technology

Project Proposal Submission Date: 07/02/2024

Project Name: Solar-Powered AI Camera Drone

Mission: Our mission is to revolutionize aerial surveillance and photography through cutting-edge artificial intelligence integrated into a versatile camera drone. We aim to create a drone that not only captures stunning aerial footage but also utilizes AI algorithms to enhance its capabilities for various applications.

Dear Sir,

I hope this letter finds you in good health and high spirits. We, the undersigned members of project group, are writing to present our project proposal titled "Solar-Based AI Camera Drone." We are excited about the prospect of undertaking this project under your guidance and mentorship.

1. Introduction:

The project aims to develop a sustainable, solar-powered autonomous drone equipped with advanced artificial intelligence (AI) capabilities. This drone will serve various purposes, including surveillance, monitoring, and data collection, making it an innovative and environmentally friendly solution for a wide range of applications.

2. Objectives:

- ✓ Design and build a solar-powered drone capable of prolonged flight time.
- ✓ Implement advanced AI algorithms for autonomous navigation, and object recognition.
- ✓ Integrate a high-resolution camera for capturing and transmitting real-time imagery.
- ✓ Develop a user-friendly interface for remote control and monitoring.
- ✓ AI or GPS-based position holding or return to home technology.

3. Justification:

The Solar-Based AI Camera Drone addresses the growing need for efficient and sustainable surveillance solutions. Its solar-powered design reduces reliance on conventional power sources, making it cost-effective and environmentally friendly. The incorporation of AI enhances its capabilities, allowing it to operate autonomously and adapt to various environments.

4. Methodology:

- ✓ Research and analyze existing solar-powered drone technologies.
- ✓ Implement the drone structure, incorporating solar panels for energy harvesting.
- ✓ Develop and implement AI algorithms for autonomous navigation. Also using the mission planner software to develop inbuilt algorithms.
- ✓ Integrate a high-quality camera and establish real-time data transmission with the long-range capability.
- ✓ Create a user interface for remote control and monitoring, through the laptop or smart phones.

5. Expected Outcomes:

- ✓ A fully-functional solar-powered AI camera drone capable of autonomous operation.
- ✓ Improved surveillance and data collection capabilities through advanced AI algorithms.
- ✓ Increased awareness and understanding of sustainable drone technologies.
- ✓ Increasing the stability and decreasing the noise of the drone technology.
- ✓ Taking heavy weight with high range technology around 1.4 kilometer

6. Budget:

Camera-Based Quadcopter Drone					
S L	Name of the Instrument	Price	Quantity	Total Price	
1	S500 Quadcopter drone frame with carbon fiber landing gear	5500	1	5500	
2	APM 2.8 Flight Controller	6700	1	6700	
3	DJI 2312 Panthom 3 Engine Brushless Motor	700	4	2800	
4	5.8G 25mW Transmitter with 1000 TVL camera	4000	1	4000	
5	DJI 9450 Self-Locking Propeller	250	2	500	
6	ESC	650	4	2600	
7	Fly sky FS-i6S 2.4G 10CH Transmitter	9000	1	9000	
8	2200mAh Tiger-3S 11.1V 35C Lipo Battery	4200	1	4200	
9				0	
			Total	35300	

7. Team Members:

Name of Team Member	Roles of each team member and highlighting their expertise and contributions to the project.
Robiul Hossen	Selecting the best drone frame.
Tarak Ahmed	Choosing a high-resolution cost-effective drone camera.
Anik Dey	Finding the right battery for the project
Razowan Kabir	Programing and Design and finding the best Brushless motor.
Pantho Mandol	Selecting the cost-effective radio transmitter and receiver.
Most.Murshida Khatun	Collecting the found.
Sujan Chakma	Choosing the best flight controller for our drone.

8. Discussion:

By addressing these topics in the discussion, we can gain a comprehensive understanding of the opportunities and challenges associated with the development and deployment of AI camera drones. This understanding will inform decision-making and drive the technology forward in a responsible and impactful manner. While AI camera drones offer advanced capabilities, cost and accessibility can be barriers to adoption, especially for smaller businesses and individuals. Discussing strategies to make the technology more affordable and accessible can broaden its reach and impact. Looking ahead, the discussion can explore potential future directions for AI camera drones, including advancements in AI algorithms, integration with other emerging technologies such as augmented reality, and opportunities for collaboration with industry partners.

9. Conclusion:

We believe that the Solar-Based AI Camera Drone project aligns with the current trends in sustainable technology and artificial intelligence. Your guidance and expertise will be invaluable in ensuring the success of this project and ultimately, this project will bring a change in this field and bring welfare for the society.

We sincerely hope for your approval and support to proceed with this exciting venture. We are eager to contribute to the advancement of technology and make a positive impact on the field and in society overall.

Thank you for considering our proposal, and we look forward to the opportunity to discuss it further.

Sincerely,

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