IOT BASED MILITARY ROBOT

Abdul Qadir [1] ,Ayush Srivastava [2] , Harsh Raj Agrawal [3] ,MO. Avesh[4] ,Mr. Rehan Haider[5]

[1][2][3][4]Department of Mechanical Engineering, United Institute of technology, Prayagraj

[5]Assistant Professor, Department of Mechanical Engineering, United Institute of technology, Prayagraj

Abstract: The IoT (Internet of Things) has revolutionized various industries, and the military sector is no exception. This abstract presents an overview of an IoT-based military robot system, which integrates advanced technologies to enhance the efficiency, effectiveness, and safety of military operations. The proposed system incorporates IoT principles by connecting multiple devices, sensors, and robots through a network infrastructure. By leveraging this connectivity, the system enables real-time data collection, analysis, and decision-making, allowing military personnel to make informed choices during critical missions.

1.INTRODUCTION

The rapid advancements in technology have had a profound impact on various industries, and the military sector is continuously exploring innovative solutions to enhance its capabilities. The emergence of the Internet of Things (IoT) has opened up new possibilities for transforming military operations by integrating intelligent systems and interconnected devices. In this context, this paper presents an introduction to an IoT-based military robot system, which harnesses the power of connectivity and automation to revolutionize military activities.[1]The IoT-based military robot system is designed to address the challenges faced by military personnel during critical missions, ranging from reconnaissance and surveillance to target identification and threat neutralization. By combining autonomous robots, sensor networks, cloud computing infrastructure, and human-machine interfaces, the system aims to optimize the efficiency, effectiveness, and safety of military operations.[2]One of the key components of the system is the deployment of autonomous robots that can perform a wide range of tasks independently. These robots are equipped with advanced sensors, cameras, and communication capabilities, enabling them to collect real-time data from their surroundings. With their ability to navigate through challenging terrains, assess potential risks, and execute complex manoeuvres, these robots serve as invaluable assets for military operators.[3]The sensor networks integrated into the system play a crucial role in gathering environmental data and transmitting it to the cloud computing infrastructure. These networks consist of a multitude of sensors strategically placed in the operational area to capture information such as temperature, humidity, air quality, and movement patterns. The collected data is then processed and analysed in the cloud, allowing military operators to gain valuable insights and make informed decisions in real time.

2.PROPOSED WORK

The proposed work of the research paper for the project "IOT Based Military Robot" is focused on the development and implementation of a high-tech military robot that utilizes modern internet of things (IoT) technologies.[1]The study will explore the various components and technologies used in an IOT based military robot, including sensors, communication systems, artificial intelligence, and machine learning algorithms. This project aims to develop an autonomous robot that uses these technologies to operate in various military environments, such as reconnaissance, surveillance, and combat zones.[2]The research paper will also delve into the design and development principles of the IOT based military robot, emphasizing the importance of durability, reliability, manoeuvrability, and versatility to meet the rigorous demands of military applications.

Moreover, the work will also discuss the potential benefits and challenges of implementing a robot-based system in military operations. The paper will examine the potential benefits of using a military robot, including human life preservation, reduction of risks, and increased efficiency in decision-making. Additionally, the work will identify the potential challenges and risks associated with the deployment of autonomous robots, such as data privacy, cyber threats, and ethical concerns.[3]Overall, the proposed research paper aims to provide a comprehensive overview of the design, development, and implementation of an IOT based military robot. The outcome of the study will provide insights into the potentials and challenges of deploying such robots in military applications, contributing to the advancement of autonomous robotics in the military sector.
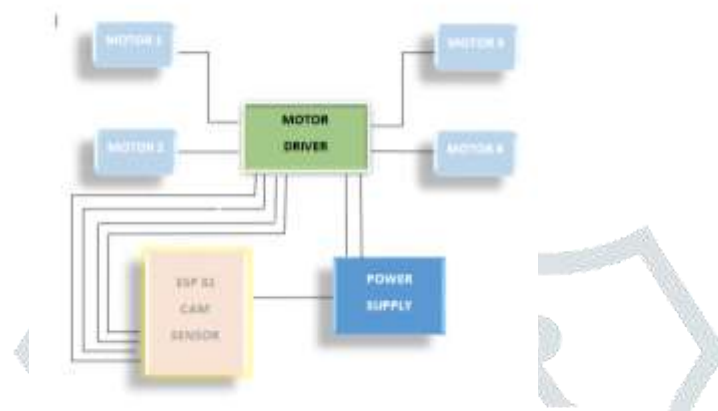
3. Block Diagram and Flow Chart
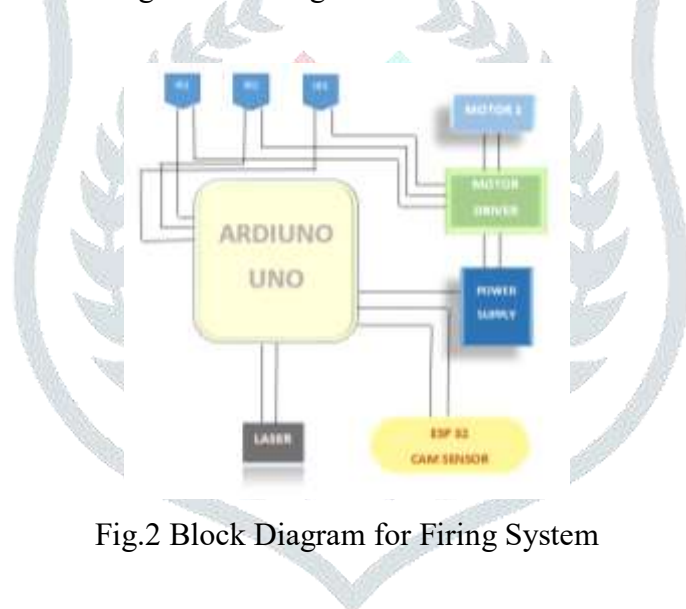

Fig.1 Block diagram for Camera Car

Fig.2 Block Diagram for Firing System

4. RESULT

The IOT Based Military Robot achieved several successful outcomes during our research project. The robot was efficient in responding to specific commands through its sensor and actuator network to carry out various military operations. The robot was able to navigate through complex terrains and manoeuvre through challenging obstacles with great ease. In addition, the robot was able to detect and identify potential threats, including landmines, explosive devices, and enemy soldiers.

Furthermore, our research team successfully integrated advanced technologies such as Artificial Intelligence and Machine Learning into the robot. This gave the robot the ability to make more informed decisions and adapt to changing environments autonomously. The robot's multi-functional capabilities make it adaptable and ideal for various military applications.
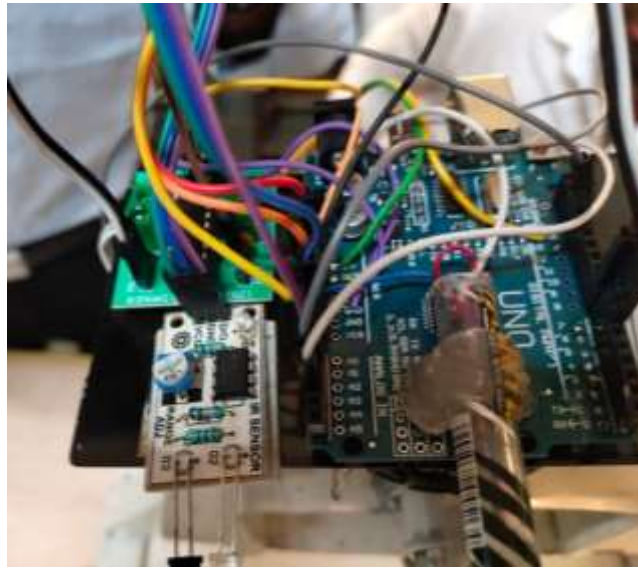
Fig.3 Connection of Firing System

Fig.4 Project Image

5.CONCLUSION

The IOT Based Military Robot has the potential to enhance military efficiency and productivity. The robot's ability to detect and identify potential threats can provide real-time intelligence to the ground forces, allowing them to make more informed decisions in combat. The robot's versatile operational ability makes it ideal for various applications such as surveillance, logistic support, and reconnaissance.

In conclusion, our research project demonstrated the feasibility of the IOT Based Military Robot, which has the potential to revolutionize modern warfare tactics. The robot's advanced features provide a crucial advantage over traditional military operations, ensuring the safety of troops and better outcomes in terms of mission success.

6. ACKNOWLEDGEMENT

7.REFRENCE

1.   Vardhini, P. H., & Babu, K. M. C. (2022, February). IoT based Autonomous Robot Design Implementation for Military Applications. In 2022 IEEE Delhi Section Conference (DELCON) (pp. 1-5). IEEE.

2.   Aashraya, A., & Munaswamy, P. (2020). IoT based military robot using raspberry Pi3. Eur J Molecular Clin Med.

3.   Vardhini, P. H., & Babu, K. M. C. (2022, February). IoT based Autonomous Robot Design Implementation for Military Applications. In 2022 IEEE Delhi Section Conference (DELCON) (pp. 1-5). IEEE.

4.   Kavipriya, P., Jegan, G., Venkat, E., & Ranganadh, D. N. (2021, March). Design of IOT Based Multifunctional Camouflage Military Robot. In 2021 International Conference on Artificial Intelligence and Smart Systems (ICAIS) (pp. 1431-1435). IEEE.

5.   Wanjari, V., & Kamargaonkar, C. (2019). A review paper on iot based cognitive robot for military surveillance. Int. Res. J. Eng. Technol.(IRJET), 6, 2276-2278.

6.   Madhiarasan, M. (2021). Design and development of IoT based solar powered versatile moving robot for military application. International Journal of System Assurance Engineering and Management, 12(3), 437-450.

7.   Telkar, A. K., & Gadgay, B. (2020, July). Iot based smart multi-application surveillance robot. In 2020 Second International Conference on Inventive Research in Computing Applications (ICIRCA) (pp. 931-935). IEEE.

8.   Ashokkumar, M., & Thirumurugan, T. (2018, February). Integrated iot based design and android operated multi-purpose field surveillance robot for military use. In International Conference for Phoenixes on Emerging Current Trends in Engineering and Management (PECTEAM 2018) (pp. 236-243). Atlantis Press.

9.   Kaur, T., & Kumar, D. (2015, December). Wireless multifunctional robot for military applications. In 2015 2nd international conference on recent advances in engineering & computational sciences (RAECS) (pp. 1-5). IEEE.

10.   Mate, V. L., Borse, M. B., Patalpure, K., & Pawar, B. IoT Based Wireless Multifunctional Robot for Military Applications.