NARASARAOPETA ENGINEERING COLLEGE (AUTONOMOUS)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

2021-2022

Batch Number	DB13
Team Members	B. Pavan Dath (22475A0517) A. Raja Vamsi (22475A0508) M. Venkata Sai (21471A05N7)
Guide	K Suresh Babu, M.Tech
Title	Enhancing Security: A Deep Learning Approach for Automated Weapon Detection
Domain/Technology	DEEP LEARNING
Base Paper Link	https://ieeexplore.ieee.org/abstract/document/10537568
Dataset Link	Different Weapon Categories
Software Requirements	Browser: Any latest browser like Chrome Operating System: Windows 7 Server or later Python (COLAB)
Hardware Requirements	System Type: Intel Core i5 or above RAM: 8 GB Number of cores:5 Number of Threads: 4
Abstract	The recognition of weapons from images plays a pivotal role in ensuring public safety and national security. In the current landscape of increasing firearm-related incidents, the need for accurate and efficient weapon detection systems is more crucial than ever. Conventional weapon recognition systems often rely on handcrafted features and traditional computer vision methods, which are limited in their ability to adapt to the diverse range of weapons and environmental conditions. These drawbacks result in reduced accuracy and the potential for false negatives or positives, endangering lives. In response to these challenges, our proposed system leverages state-of-the-art deep learning algorithms to automatically learn discriminative features from weapon images. The proposed system's versatility is demonstrated through its ability to detect various types of weapons, including handguns, rifles, and knives, while also adapting to different lighting conditions and backgrounds. This research represents a significant step towards leveraging machine learning to bolster public safety and security measures, ultimately reducing the potential risks associated with weapon-related incidents.

Signature of the student(s) **Signature of the Guide** **Signature of the project coordinator**