OPTIMAL SOLUTION FOR FIRE ACCIDENT AT FIREWORKS INDUSTRY USING CONVOLUTIONAL NEURAL NETWORKS

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Now a days, a fire accident triggered by an explosion at a firecracker factory increasing rapidly. My research focuses on finding smart solution to avoid this major fire accident. This includes detect the fire as early as possible using deep learning models, alarming users and a self-directed timely response to suppress the fire there by reduce the ecological, social, and economic damage. Real time fire detection framework is designed using light weight YOLO v3 Convolutional Neural Network (CNN) algorithm. It gives more than 83.7% accuracy in fire detection which is much higher than other proposed algorithms. The dataset is generated using real time video capturing through CCTV surveillance camera. Then the Image recognition algorithms based on convolutional neural networks (CNNs) can automatically learn and extract complex image features effectively to detect the fire or smoke in real time capturing videos. Once it is detected then the system will strongly alert the user as well as autonomous fire fighter are used to suppress fire and save the life of many employees worked in firecracker units across the country.