**UAV Autonomous Target Search Based on Deep Reinforcement Learning in Complex Disaster Scene**

The proposed system is about designing UAV autonomous path using deep enforcement learning in order to rescue people in post disaster.this paper proposed a snake game to automate path for drone.Snake body is used to represent drone and hotspot is used to denote target to be searched.main focus is to create a strategic agent that will be able to play as many game as possible.system uses Markov decision to represent agent with state action and reward state,Q-learning,Markov Decision process ,Depth Q Learning(DQL).DQL consist of multiple state as input and actions as output that need to be perform.state include raw picture frames (240×240 pixel images) performing prepossessing to reduce dimension,RGB image is converted to grayscale,used Q learning with neral network in order to find small paths autonomously.

**UAV-Based Situational Awareness System Using Deep Learning**

The proposed system mainly focuses on situational awareness system implemented using UAV which is very useful in many areas like search and rescue, surveillance, disaster response etc.Designed a Personal-Action-Locator(PAL) system uses Visual camera mounted to UAV, intelligent processing to detect people,their action,map their location on PAL.main component is Deep learning trained to detect multi-person and action recognization.the Pixel2GPS converter that estimates the GPS position of persons by image processing.CNN is used for object detection and recognization.PAL deployed on Jetson TX2 (8 GB RAM), that we use as the onboard computer for the DJI Matrice 100. used DJI Phantom 4 and its

built-in gimbal equipped camera to scan a target area.As a result human detection, we obtained a map of 60.9% in the surveillance test, as compared to 85.0% in the target.

**Deep Learning-Based Super-Resolution Reconstruction and Marker Detection for Drone Landing**

This system proposed a deep learning based SR reconstruction and marker detection for drone landing.In SR reconstruction low resolution image frame 320 × 240 pixelsis capture then this feed to the module that combined the SR reconstruction and Marker detection CNN for detecting landing area.the inputted image feed to CNN with DCSCN which produced high resolution image.combining and training multiple CNN network with is difficult so the proposed system focuses on two network separately.DCSACN achieve more efficient computation,uses 1\*1 CNN layer, input feature map of 80 × 80 × 410.R-CNN exabit high performance in terms of object detection,process 200 frome per second.YOLO is laternative that exabit 10 high performance than R-CNN.Snapdragon 835 and Jetson board TX2 tool used.The self-collected dataset of low-resolution marker images and our trained models for SR reconstruction and marker detection are made available to other researchers

**AUTONOMOUS NAVIGATION OF UAV IN LARGE-SCALE UNKNOWN COMPLEX ENVIRONMENT WITH DEEP REINFORCEMENT LEARNING**

The proposed system focuses onincrementally building a map of the unknown

environment and use it to localize.the model include deep Reinforcement learning (DRL),reinforcement learning (RL),Markov decision processes (MDP),partially observable Markov decision processes (POMDP) which helps in navigation in complex environment.recurrent deterministic policy gradient (RDPG) and fast RDPG algorithm helps in navigation.There are certain limitation associated with proposed system firstly we need to test this model in real environment so it include complex obstacle like wires,and tress that is challenging.

**Real-time UAV Detection based on Deep Learning Network**

The proposed system mainly focuses on deep learning based YOLO(You Only Look Once) model for detecting UAV.YOLO model takes input image,resize input image to 416\*416,divide image into 5\*5 grid,object center fall on grid,if yes then responsibility of grid to detect object,predict B’s bounding boxes,calculate bounding box x,y,z,h confident.,predict conditional probability,determine bounding box confidence score. else undefined object.YOLOv2 is 92.10% accurate and YOLOv3 is 95.20% which is better but YOLOv3 took longer training time. Mean average precision(MAP) is also calculated for both YOLOv2 and YOLOV3. deep learning used in YOLO model for real UAV detection.

**DEEP LEARNING FOR SEMANTIC SEGMENTATION OF UAV VIDEOS**

This paper proposed a fully convolutional networks (FCN) and the Convolution Long Short Term Memory (Conv-LSTM) for semantic video segmentation.algorithm tries to combine FCN AND Conv-LSTM together.FCN model serve as frame based segmentation method used to segment each frame,Conv-LSTM used for post processing which makes used of information between consecutive frame.input image passes to FCN,extract video from UAV,original image 3840×2160 pixels or 4096×2160 pixels,image clipped to smaller patches 2048×1024 pixels,implemented through TensorFlow,trained Cov-LSTM with output segmentation result FCN,segmentation result resize to 512\*288 pixels,length of each frame is 4 block,overlap to 3 consecutive frame.result find in terms of Intersection over Union (IoU) either true positive or false negative.

**A Deep Learning Approach to UAV Image Multilabeling**

This paper mainly focuses on generating multilabeling image using deep learning approach.input frame passed to CNN module which divide image into equal frame size further multilayer perceptron (MLP) is used for classification.GoogLeNet used to generates a feature vector of size equal to 1024. *Otsu’s Thresholding Algorithm is used to find hypothesis between 2 classes.*a RBFNN model is trained for the classifification task.AlexNet-RBFNN and GoogLeNet-RBFNN used for feature extraction.GoogLeNet-RBFNN and AlexNet-RBFNN score 79.3% and 78.4% of average accuracy respectively for data set 1, and 77.4% and 76.9% of average accuracy for data set 2 for given data set.

**Simplifying and Managing the Process of Structural Audit-relevant**

This paper proposed traditional audit technique in which methodology and process is given in detail. There are many buildings that have reduced strength in due course of time because of structural deficiency, material deterioration, unexpected over loading or physical damage.In order to ensure that the building and its premises are safe and have no risk.The Audit highlight & investigate all the risk areas, critical areas and whether the bldg. needs immediate attention. It also covers the structural analysis of the existing frame and pinpoints the weak structural areas for static, wind & earthquake loads. The need of structural audit is for maintenance and repairs of existing structures whose life has exceeded the age of 30 years to avoid any mishaps and save valuable human life. **Methodology include** The process of structural audit is studied with the data available with various auditing firm. To find the gap in the procedure if any by the method of Questionnaires to the Owners of various Existing Structures.

**Strength Analysis of Buildings using Image Processing and SHM Principles - relevant**

The system proposed include inspection methods that is vital for diagnosis and maintenance of structures but we cannot depend upon conventional strategies of detection. Manual methods are that often used is error prone and need considerable time and effort.Conventional damage detection approaches does not produce better results in damage detection. So the need of c automation of visual inspections increased efficiency in damage assessment.

Different inspection techniques have been emerging in the field of crack .