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Patent Search

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Abstract:

The system proposed is implemented to assist rescuers and disaster management personnel, as it can acquire aerial visuals and transmit as individual frames to ground control. Whereas on ground a computing device processes the visuals and detects the humans in frames, the frames are geo- tagged. Therefore, the human detected in frame can be located on map, which will help the rescuers to find and rescue the person in an efficient way.

Complete Specification

Claims: UAV system to assist rescuers in search operation, which transmits live visuals over a channel to ground computer to process the visuals to detect humans.
 Using Faster-RCNN we can process the frames in less time.
 Using Wi-Fi, we are further reducing latency in transmitting the frames from quadcopter to ground station. . Description:Arduino micro-controller-based flight controller is heart of system, which is responsible for flight, stability and manoeuvrability of quadcopter. The flight controller is remotely controlled using a 6 channel, 2.4 GHz Trans-Receiver. A camera is interfaced to Raspberry Pi. And housed on board of quadcopter. The Raspberry Pi acquires visuals through camera and is processed further and extracted as bytes stream. The byte stream is then transmitted over a Wi-Fi channel with the help of raspberry pi's onboard Wi-Fi modem. Which is received at ground computing device, where the byte stream is packed together to form an image frame. The frames are passed as arguments to the pre-trained machine learning models to detect humans in the frame. If an human is detected in the frame, the geo location of when the frame was captured can be retrieved from frame detail as captured frames are geo-tagged.

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