Image Sensor Cameras, Drones and Implementation of Wireless Networking Technologies.

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Abstract: CCD cameras are either line scan cameras or area imagers used in analog applications. They do not have the capability of integrating functions in the chip itself, hence CMOS imagers are used for now power usage and on chip integration of functions to implement in the camera itself. Specially nowadays for motion detection purposes, perimeter inclusion detection, video surveillance, traffic surveillance purposes IP, bullet, PTZ, box, edge, cloud cameras are used. They could be integrated with AI, IOT, Machine Learning algorithms to improve the coverage and also automation. Wireless networks are used to transmit the images or videos using antenna, transmitters and finally received by receivers which is streamed through Power of Ethernet mechanism to the computer for further processing using either CPU or GPU or TPU as per requirement of the processor to analyse the data. For low power applications LoWAN technology can be implemented in the cameras. Either than cameras specially in harsh environments where human encroachment is impossible drones are utilized for surveillance using GNSS, GLONASS networks which is detected by radars and signal transmission occurs. Although frequency for wireless cameras are in the range of 2 to 6 MHz as per requirement. To save power some places use solar panel mounted in poles, otherwise electrical post exists where there the cameras are mounted to obtain power. Although IOTs are also integrated with cameras for parking lot due to detection of vehicles i.e. cars and other four wheelers. These are embedded electronics for improved functionality. I can use Adruino processor boards or Raspberry Pi camera processor boards for building System on Chip. Zigbee networks could be used for wireless connection between the devices. Matlab, Simulink or other softwares with Linux or Windows or Macintosh operating system with Enterprise or Server edition could be used for image and video data analytics. Analysis could also be done for images and videos using digital video forensics whether they are real or fake or any tampering has been favoured or not.

Publications: (1) Artifacts removal and edge extraction for image processing in IJOART, 2017, ISSN No.-2278-7763.

(2) Object Detection and highspeed Data Read out of Image Sensors by developing image processing algorithms in IPROMM 2009.

(3) Development of Image Enhancement and image compression algorithms for color images in an image sensor in ICVLSICOM 2010.

(4) Detection of Forgeries in Images for Forensic sciences using pattern noise model in IJETSE, 2011.

(5) Video transmission in block vectors for surveillance applications in IJSR, 2016.

Biography: I am an unmarried lady of 47 years age with strong passion in IT, Software and cameras in surveillance applications. I do have an electronics background in Physics as basic degree with M.Sc., M.Tech. I have worked in Industry with a job and also in academics with my innovation possibilities in the above field.

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