عنوان مقاله:

Face detection and recognition drone accelerated with FPGA

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خلاصه مقاله:

In this paper, we proposed a three stage accelerated face detection and recognition system mounted on a drone. In the first stage the captured images by the drone are used for face detection and the detected faces are prepared and sent to the next stage for face recognition process. In this stage, in order to mitigate workload of the cloud layer most of the face recognition calculations are performed on the edge layer which is an FPGA auxiliary hardware. The FPGA significantly speeds up the performance of the whole system and provides a solid foundation for live face detection and recognition platform. At the third stage face recognition process is completed on the cloud layer. This platform can be used in several cases like detecting wanted people in the borders or in dangerous areas. This accelerated system is examined using several indicators such as the imposed workload on the cloud layer, resource usage, lag time, power consumption etc. Test results emphasize on the use of edge computing specially by utilizing FPGAs.

کلمات کلیدی:

Face recognition, edge computing, drone, cloud computing, FPGA

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