

4. CONCLUSIONS

In this work, it is aimed to construct the optimum performance SURF algorithm with HLS. Modules implemented with HLS in the study are primarily optimized as hardware using directives between HLS tools. The success of the SURF algorithm is tested on the data set generated by the numbers. In this context, tests were done using images in 45x80 dimensions. It is aimed to determine optimal values by optimizing the parameters used in algorithm with genetic algorithm. For this, the octave-1 values (representing the filter sizes used in the SURF algorithm) and the threshold value are optimized. Optimize algorithm has been determined optimal values by giving possible range of values and these values are used in SURF algorithm. Using the values of the optimized parameters, the success rate is significantly increased. Proposed approach can be used for different applications such as object recognition, handwriting character recognition.

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