

# **An Application of the Least Squares Plane Fitting Interpolation Process to Image Reconstruction and Enhancement**

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**Key words:** Image enhancement, Interpolation, Least squares.

## **SUMMARY**

This work applies a least squares plane fitting (LSP) method as an alternative way of interpolating irregularly spaced pixel intensity values that are suitable for image reconstruction of a static scene via super-resolution (SR). SR is a term used within the computer vision and image processing community to describe the process of reconstructing a high resolution image from a sequence of several shifted images covering the same scene.

The accuracy attainable by this process is estimated via tests where the simulation parameters are controlled and where the reconstructed high resolution image can be compared with its original. In these tests the original image is scanned randomly so as to create a sequence of low-resolution and JPEG compressed shifted images. The comparison is based on the RMSE of the differences between the reconstructed image and the original.

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