Edge-based Segmentation

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The Problem

- Edge Detection is non-trivial for computers
- Do we want every small edge?
- How do we find a good solution in a broad spectrum of cases?

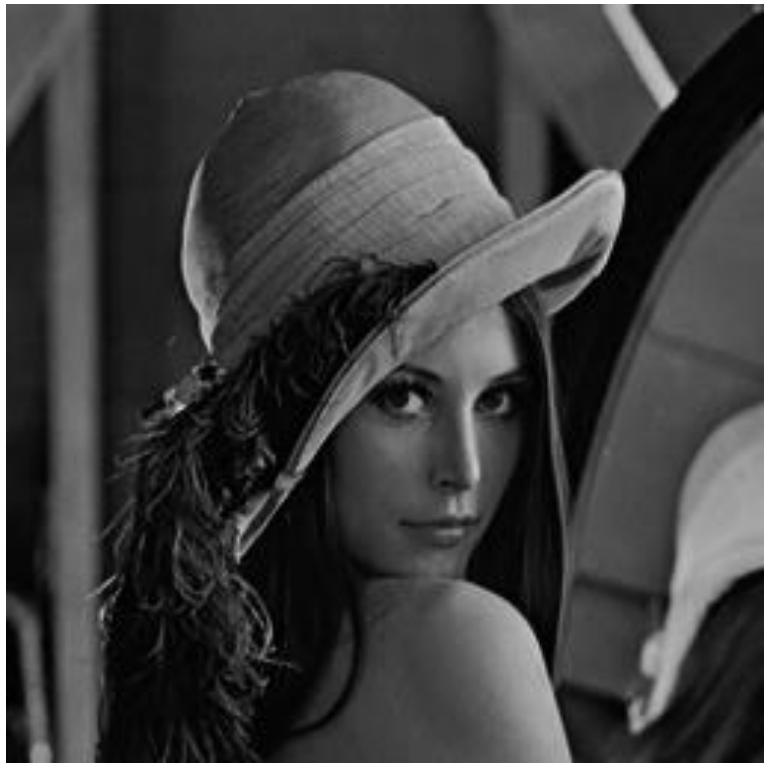
Image: https://saylordotorg.github.io/text_introductory-statistics/s14-02-the-linear-correlation-coeffic.html

The Method

- Transform image to grayscale
- Filter the data with a low/high/median pixel window.
- Round image to black an white by choosing a threshold
- Colour only pixels with dissimilar neighbours black

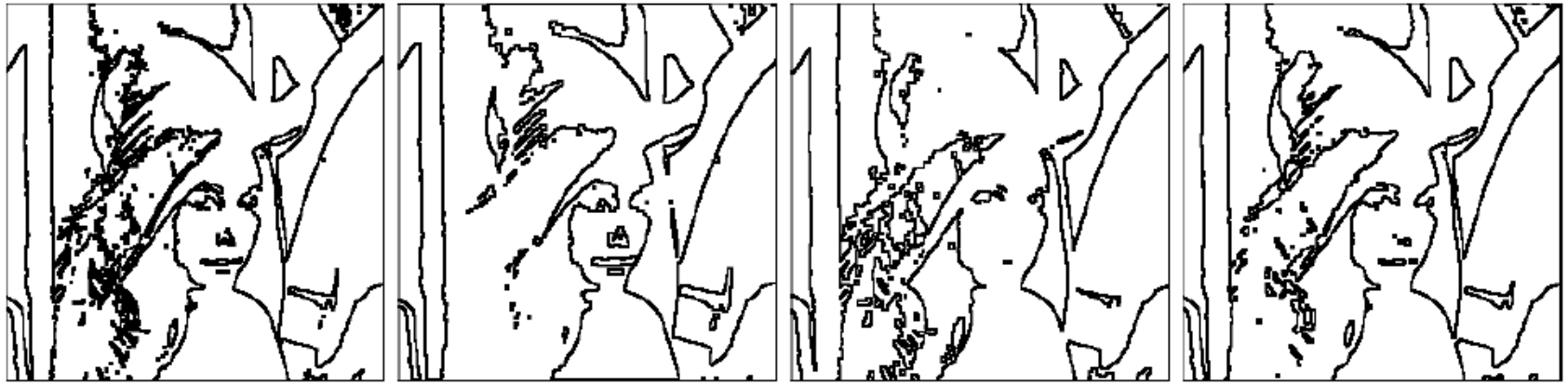
Image: https://saylordotorg.github.io/text_introductory-statistics/s14-02-the-linear-correlation-coeffic.html

Example



Results

(a) No Filter (b) Low Pixel (c) High Pixel (d) Median Pixel



(a) No Filter (b) Low Pixel (c) High Pixel (d) Median Pixel

Possible code additions

- The neighbour checking loop may also be extracted and run on Maxeler
- The threshold for rounding may be calculated based on mean/average pixel
- More or less logic may be implemented for edge cases