



Image Enhancement by Modifying Gray Scale of Individual Pixels



Image Enhancement

- Goal: to modify an image so that its utilization on a particular application is enhanced.
- A set of ad hoc tools applicable based on viewer's specific needs.
- No general theory on image enhancement exists.
- Methods:
 - » Spatial domain
 - Pixel processing
 - Gray level transformation: Data independent
 - histogram processing: Data-dependent
 - Arithmetic ops
 - Spatial filtering
 - » Frequency domain filtering



Gray-level Transforms

- Operated on individual pixel's intensity values:
 $s = T(r)$. r : original intensity, s : new intensity
- Data independent pixel-based enhancement method.
- Approaches
 - » Image negatives
 - » Log transform
 - » Power law transform
 - » Piece-wise linear transform