New Course in Fall 2006
EE4328-005: Introduction to Digital Image Processing

Instructor

Dr. Zhou Wang, Dept. of Electrical Engineering, The University of Texas at Arlington
Office: 508 NH; Email: zhouwang@uta.edu; Web: www.uta.edu/faculty/zhouwang/

Course description

This course introduces the basic theories and technologies of digital image processing. Topics include discrete representation of images, intensity transformations for image enhancement, spatial domain linear filtering, two-dimensional discrete Fourier transform and frequency domain filtering, nonlinear image filtering, edge detection, image segmentation, image compression, and digital video processing and compression.

Learning objectives

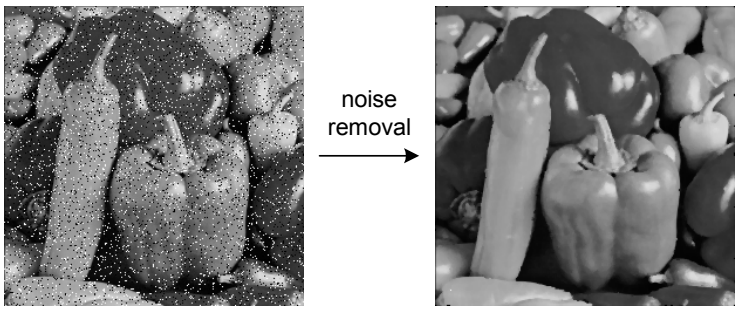
The students are expected to be able to understand and implement (using software) a number of useful algorithms to solve real world image processing problems. Examples include: 1) How to remove noise from an image? 2) How to sharpen a blurred image? 3) How to automatically detect edges and segment objects from an image? 4) How to estimate motion in video? 5) How do the JPEG and MPEG compression systems work?

Who should take the course?

Senior/junior undergraduate students who 1) are preparing for the job market of the digital image/video processing, digital imaging, and multimedia communication industry, 2) plan to take the capstone course in DSP area (likely will be offered in Spring 2007), or 3) plan to pursue graduate study in related areas.

Prerequisite

EE3318 or consent of the instructor



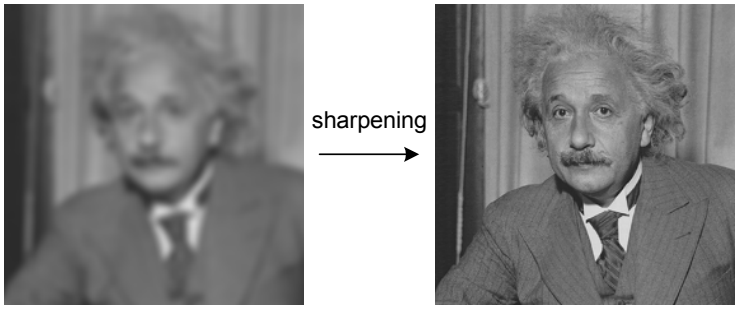


image "foveating"

face detection