Draft Projects
Image Processing With Applications
Spring 2008, Math563/CSCI567

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The projects include: survey of the existing literature; description of the theory; algorithm; C++ (Java or C sharp) program to implement the algorithm; experiments, derived conclusions. An input to the program is: an 24 bit .bmp image, and data related to the particular project. Output: the enhanced image, the run time. If a number is not given it is considered that the team will be composed by 4 students.

Project 1. Definition of homogenous regions in an image.
Team:

Project 2. Steganography- hiding (storing) image using the two less significant bits.
Team:

Project 3. Median filter and its effect on edges and noise
Team:

Project 4. Hough transform.
Team:

Project 5. Development of an Image Database tree structure on the base of Convex Hull, Concavities and object's support.
Team:

Project 6. Texture estimation by entropy and histogram skewness (the third moment).
Team:

Project 7. Fuzzy sets for image filtering.
Team:

Project 8. Image semantics. **Definitions, different kinds of semantics. Applications, examples.**
Team: one student

Project 9. Application of Gradient and Laplacian to image features extraction.
Team: two students, they will use existing tools for performing experiments.

Project 10. Application of geometric features (corner points) to determine image semantics, such as correlations between regions.
Team: three students, they will use existing tools for performing experiments.

Project 11. Calculation the number of concavities on an image region.

Project 12. Summation, subtraction, AND and OR of images.

Project 13. Image averaging in case uncorrelated noise.

Project 14. Image filtering with Gaussian filter.

Some of the titles are subjects of elaboration until the next meeting on February 19,2008, when the teams and the projects will be paired.