

EN-74 Project

In place of a final exam, you will build (or program) a final project. You may work in teams of up to three or individually. On December 6, your team will demonstrate and present the project to the rest of the class.

The project can be a MATLAB program alone or can also involve a piece of hardware (e.g., a camera), but the project should

1. focus on some aspect of image or video processing
2. apply some of the ideas that you have learned in this course

You can find ideas for projects on the web, in the suggested textbook listed on the syllabus, or I am always happy to brainstorm with you. Possible topics include but are not limited to

- Those listed in the file tip edics.pdf
- Those listed at <http://homepages.inf.ed.ac.uk/rbf/CVonline/> or any links from this page
- Some more specific ideas that may be of interest
 - Segmentation using snakes, active contours or level set methods
 - Inverse problems and deconvolution
 - X-ray tomography
 - Use of partial differential equations to do image enhancement (non-linear and anisotropic diffusion as in <http://www.jstor.org/view/00361429/di976282/97p0013a/0>)
 - Inpainting: <http://mountains.ece.umn.edu/guille/inpainting.htm>
 - Wavelets and multiscale processing

The first step is to write a project proposal (see below).

The project *should not* be extremely complicated. It is hoped that your topic will arise from your own interests and ongoing work. Be creative! Have fun with this project.

Suggested Project Proposal Outline: Due November 8, 2007

- I. Title Page
 - a. Provide a descriptive name for your project
 - b. List the names of the project team members
- II. Brief Introduction (1-2 paragraphs)
 - a. What is the goal of the project?
 - b. What will your device/program do?
- III. Technical Description
 - a. Describe the basic principles behind the device/program?
- IV. Resources
 - a. Estimate the amount of time needed to build the project