Course Project

Final Due Date: December 10, 2012

Project Overview

The project for the Biometrics course is one of the most important and, hopefully, exciting components of the course, since you will have the opportunity to develop a biometrics algorithm of your own choosing. Though Matlab may be the easiest language to use, you can implement your algorithm in whatever language you prefer. Note that you do not have to completely develop a new algorithm, but should feel free to use any algorithm from the literature.

There are three important deadlines for the project:

1. **November 1** to **November 6**: Project Descriptions
2. November 27 and 29, December 4 and 6: Project Presentations
3. December 10: Final Project Reports

Project descriptions and final reports are due at 5pm on their due dates.

Project Description

The project description should include the title of the project, participants, a description of the objectives of the project, and a plan for how the project will be completed. The description of the objectives should include modest predictions of the success of the project. The plan for completion should include details on where the data will come from, on what computer language the project will be implemented in, and on the final form of the project.

You are permitted to work together on a project. There must be, however, a clearly delineated division of labor, and you should state in the project description and project reports who was responsible for which portion of the project. (Students will not necessarily get the same grade for the same project.) Groups may not consist of more than two students.

The 6000 level students should include with their description a brief synopsis of at least 2 papers you have read in this area and how the work described in the papers is relevant to your project.

You should mention whether you are simply implementing what others have done before or whether you are attempting to do something new to the best of your knowledge.

With your project description, you should also say which days you’d prefer to present. Please give a first, second and third choice, but be aware that you might not get your
preference. Send your project description and presentation date preference to Jiongxin at liujx09@cs.columbia.edu.

Project Presentations

To allow students to present their work in four class periods, each student will have only 3 minutes, not a second more. We will be strict about the timing, so you should practice your presentation. The key here is to across three things: what you did, how you did it, and how well it worked.

Project Reports

The reports should be a fairly complete description of the objectives of the work, the methods used to solve the problem, experimental evidence of a working system, a listing of the code, and the output of the code. You should describe what worked, what did not, and why. For group projects, each student should submit a separate report, focussing on the work done by that student.

Information Sources for the Project

There are many sources of information about recognition systems that you might want to peruse when doing a literature review for your projects. In addition to the books on computer vision and pattern recognition found via google scholar, you might look at the following other sources:

The Web: The following WWW sites provide launching points for related material. You'll find information about research groups, copies of papers, software, and databases of images.

3. Anil Jain’s Page: http://biometrics.cse.msu.edu/
4. The Face Recognition Homepage: http://www.face-rec.org/

Journals: The following are the major journals that might be of interest. Spending a few hours in the library leafing through the table of contents is a good way to learn what's happening in the field.

1. International Journal of Computer Vision
2. IEEE Transactions on Pattern Analysis and Machine Intelligence
3. Computer Vision and Image Understanding
4. Image and Vision Computing
5. Pattern Recognition
6. IEEE Transactions on Robotics and Automation
7. Machine Vision and Applications

**Conferences:** The proceedings of the following conferences include shorter and usually more preliminary papers than the journals. However, descriptions of cutting edge research usually appear at conferences before journals.

1. IEEE Conference on Computer Vision and Pattern Recognition
2. IEEE Conference on Face and Gesture Recognition
3. International Conference on Computer Vision
4. International Conference on Pattern Recognition
5. Image Understanding Workshop
6. European Conference on Computer Vision