

# BIOMETRICS Fall 2013

## Course Project

Final Due Date: December 9, 2013

### 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 develop a completely new algorithm, but should feel free to use any algorithm from the literature.

There are three important deadlines for the project:

1. November 7: Project Descriptions
2. December 3 and 5: Project Presentations
3. December 9: 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, what computer language the project will be implemented in, and the final form of the project.

You may work together with another student 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. Your project description should also state whether you are simply implementing what others have done before or are attempting to do something new to the best of your knowledge.

Because of the large class size, we will not have time for every project to be presented in class, so some of you will present in class, while some will record and submit a video presentation. In the first sentence of your project description, please state whether you

prefer to present live or prerecorded, and which live date you would prefer. Please understand that we may not be able to satisfy everybody's preference, so you should state your preferred presentation date even if your first choice is to record your presentation. Submit your project description, with this information, in courseworks by 5 pm on the due date above.

## Project Presentations

For presentations, whether live or recorded, 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, and experimental evidence of a working system, including some sample output. You should describe what worked, what did not, and why. For group projects, each student should submit a separate report, focusing on the work done by that student. In addition to the written report, you should submit your code and data, with a readme file containing instructions on how to build and run your project. Submit your files through courseworks, by 5 pm on the due date above. If your dataset is too large to submit through courseworks, make it available on line, and include the URL in your readme file.

## 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.

1. **USC Computer Vision bibliography:** <http://iris.usc.edu/Vision-Notes/bibliography/contents.html>
2. **The Computer Vision Home Page:** <http://www.cs.cmu.edu/~cil/vision.html>
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