MEng Design Project Announcement – 2017-18 AY

**Project title:** Automatic Image Analysis and Annotation

**Brief Description of Design Project Goals:**

**Overview:** With recent advance in machine learning and artificial intelligence, image analysis is not limited to low-level features any more. High-level semantic analysis has become possible. Given an image, computer algorithms can now identify objects in the image, e.g., a dog or a cat, and hence annotate the image for keywords for easy search later.

In this project, student will develop a system that allows a user to upload an image to the web/mobile app and subsequently returns a set of annotations, or tags, for the uploaded image tailored to that user.

The user is then allowed to modify the tag suggestions, by adding, removing, or rearranging the order of the suggested tags. With such information as user feedback, the system will provide analysis that would help improve tags suggestion and image search.

The project will include aspects of computer vision, machine learning, database/server management, and web/mobile app design.

**Specific MEng Contribution:**

1. Develop an application on an iOS device to allow users to upload images, return tags to users, and collect user feedback
2. Implement fast image feature extraction techniques to images in real-time
3. Implement fast database search algorithms based on the image annotations
4. Build framework that can be leveraged to create user profiles based on user feedback
5. Regular individual and group meetings will be held to encourage steady progress on the project

**ECE Field Advisor Name:** Tsuhan Chen
- Email – tsuhan@ece.cornell.edu
- Phone – 607-255-5728
- Office – Rhodes 304

**Project Web Site:** [http://chenlab.ece.cornell.edu/](http://chenlab.ece.cornell.edu/)

**Number of MEng Students Needed:** Flexible

**Required Skills:** We are looking for highly self-motivated students interested in computer vision, machine learning, and mobile app development. Proficiency in Python, C++, MATLAB is needed. Prior experience in OpenGL, OpenCV, and Mac iOS/Android programming is a plus.

**Estimated Project Time Frame:** 2017-18 Academic Year, Two (2) Semesters