University of Toronto
csc420— Introduction to Image Understanding, Winter 2010

Course Information Sheet

Brief Description

This course introduces the student to fundamental concepts in image understanding, the subdiscipline of artificial intelligence dealing with the automation of visual tasks by computer. This year, the course will be taught in the context of assistive living technology, in cooperation with researchers at the University of Toronto's Intelligent Assistive Technology and Systems Laboratory. Under the guidance of the two course instructors, students will work in small groups to design and build computer vision systems aimed at enabling users to participate fully in their daily lives.

Lecturers

Sven Dickinson	office:	D.L. Pratt 283B
	phone:	416-978-3853
	email:	sven@cs.toronto.edu
Office Hours:	Wednesday, 3:00-5:00pm	

Allan Jepson	office:	D.L. Pratt 283C
	phone:	416-978-6488
	email:	jepson@cs.toronto.edu
Office Hours:	Thursday, 3:00-5:00pm	

TA

Pablo Sala

Course Web Page

`http://www.cs.toronto.edu/~sven/csc420`

Lectures and Tutorials

Lectures:	Thursday	1:00pm – 3:00pm	BA2135
Tutorial:	Friday	10:00am - 11:00am	BAB024

Textbook, References, and Notes

There is no textbook for the course. Pointers to technical resources will be posted on the course website under "Readings."

Course Prerequisites

CSC260H1/263H1/265H1, MAT 135Y1/136Y1/137Y1/157Y1, 223H1/240H1 CGPA 3.0/enrolment in CSC subject POSt. Recommended Preparation: CSC320H1.

where (from Arts and Science Calendar):

- CSC260H1: Introduction to Scientific, Symbolic, and Graphical Computation
- CSC263H1: Data Structures and Analysis
- CSC265H1: Enriched Data Structures and Analysis
- CSC320H1: Introduction to Visual Computing
- MAT135Y1: Calculus I
- MAT136Y1: Calculus and its Foundations
- MAT137Y1: Calculus!
- MAT157Y1: Analysis I
- MAT223H1: Linear Algebra I
- MAT240H1: Algebra I

Course Notices

You are responsible for announcements made in lectures/tutorials and posted on the course website, and for reading the on-line CDF course (CSC420H1S: Introduction to Image Understanding) discussion board.

How to Get Help

There are a number of sources of help available to you:

1. instructor's office hours: for questions about projects and any discussion/lecture material covered in class.
2. course bulletin board: the tutor and the instructors will monitor the bulletin board and contribute where appropriate, e.g., answer questions about projects, clarify misunderstandings, etc.

3. email questions may be sent to the instructors, who will attempt to respond to them typically within one business day. Alternatively, the instructors may pass the email on to the tutor to respond, depending on the nature of the question. The subject of your email message should be "420 inquiry". Email should not be used to request clarification on material you may have missed during class or tutorial, nor can it be used to engage in a private tutor session. Rather, it should be administrative in nature. If you have a technical question about your project, please come to the instructor's office hours, bring it to the next class, bring it to the next tutorial, or post it to the bulletin board.

Course Schedule and Evaluation

Week	Date	Class Agenda	Assignment	Due Date	Weight
1	Jan 7	Client Visit	Group Formation & Problem Statement	Jan 14	5%
2	Jan 14	Oral Presentation & Proposal Negotiation (Problem Statement due)	Preliminary Proposal	Jan 28	
3	Jan 21	Proposal Negotiation & Project Investigation			
4	Jan 28	Proposal Negotiation & Project Investigation (prelim proposal due)	Final Proposal	Feb 4	10%
5	Feb 4	Oral Presentation & Project Investigation (final proposal due)			
6	Feb 11	Project Investigation	Progress Report 1	Feb 25	20%
7	Feb 18	Reading Week			
8	Feb 25	Oral Presentation & Project Investigation (Progress Report 1 due)			
9	Mar 4	Project Investigation (drop date: Mar 7)			
10	Mar 11	Project Investigation	Progress Report 2	Mar 18	20%
11	Mar 18	Oral Presentation & Project Investigation (Progress Report 2 due)			
12	Mar 25	Project Investigation	Final Report	Apr 1	30%
13	Apr 1	Oral Presentation & Client Evaluation (Final Report due)			
all	all		class participation & and attendance	all	15%

Projects, Oral Presentations, and Class Participation

All projects (both pdf report and Matlab code) must be electronically submitted **by the beginning of class (the e-timestamp must read 1:10pm or earlier)**; quarter past the hour is late. This includes the Preliminary Project Proposal (no code required), the Final Project Proposal (no code required), Progress Report 1, Progress Report 2, and the Final Report. You will lose 10% of the assignment's value for each day that it is late (i.e., 1:15pm submission on the due date will cost you 10% of the assignment).

You will have five formal presentations throughout the semester. Groups are expected to prepare their presentation using Powerpoint (or a suitable alternative). Groups may choose to present as a team, or designate one person to make the presentation. Each student must give at least one oral presentation over the course of the semester.

This course is an investigative, project-based, group-based service learning experience. The projects are challenging, and their outcomes will depend on the initiative and ambition of the students, the quality of discussion in the classroom, the sharing of ideas and solutions across project groups, and the overall level of engagement by the students. This is not a formal lecture-based course, but rather a weekly discussion in which individual project groups bring to the class their ideas, proposed solutions, technical questions, pitfalls, etc., and the entire class (instructors and students) discuss them and provide constructive feedback. If a lecture represents the best mechanism by which the instructors can provide such feedback, they may choose to give an impromptu lecture. But a better model may be to think of the class as a form of collective brainstorming about some really interesting projects. Since discussion and class participation is so crucial to the success of both the projects and the learning experience, we have given it a weight of 15% of your final grade. Attendance will be taken at each class, and will count touward your participation.

Illness

In the event of an illness or other catastrophe, get proper documentation (e.g., medical certificate).