

COMP 5900 – Eye Tracking in Human-Computer Interaction

School of Computer Science, Carleton University
Course Outline

Course Information

- Instructor: Nadine Moacdieh
- Contact: nadine.moacdieh@carleton.ca
- Classroom: Room location is posted on the public class schedule
- Lectures: Thursdays from 8:35 am to 11:25 am
- Office hours: Thursdays from 12 to 1 pm or by appointment; office hours can be accessed in two ways
 - In my office (HP 5135)
 - On Zoom (<https://carleton-ca.zoom.us/j/97561821006>)
- Course Website: <https://brightspace.carleton.ca/d2l/home/131330>
 - Brightspace access for University of Ottawa Students:
<https://gradstudents.carleton.ca/faculty-of-graduate-and-postdoctoral-affairs-access-to-brightspace/>

Course Calendar Description

This course explores the use, benefits, and limitations of eye tracking as an input device, a usability evaluation tool, and as part of an adaptive interface. Topics include human visual attention, techniques to assess user state, types of eye trackers, and the eye tracking data collection, processing, and analysis needed to conduct a research study. Priority will be given to the students in the OCICS joint institute and the students in the thesis-based research programs.

Required Textbook(s) and Other Resources

There is no textbook for this course. Readings, slides, and other resources will be available on Brightspace throughout the term.

Course Objectives

Students who take this course will gain an understanding of how eye tracking can provide insight into people's attention and inform the design of better displays. Students will gain experience working with an eye tracker and will run an eye tracking study on a relevant HCI topic.

Topics Covered

Main topics will include:

- History of eye tracking
- Types of eye trackers
- Human visual attention

- Eye tracking metrics
- Eye tracking experiments
- Eye tracking for usability testing
- Eye tracking as an input device
- Pupillometry
- Adaptive displays
- Scanpath comparison

Assessment Scheme

The final grade will be calculated based on the following division:

- Class participation (10%)
- Discussion lead (20%)
- Project (70%), broken down as follows:
 - Proposal (10%)
 - Progress report (10%)
 - Presentation (10%)
 - Report (30%)
 - Peer review (10%)

Attendance

There is no grade for attendance in this course. However, students are expected to complete the weekly assigned readings, attend class, and participate in class discussions.

Collaboration Policy

All submissions in this course have to be done individually. You cannot share your work with classmates or copy their work. You are never permitted to post, share, or upload course materials without explicit permission from your instructor. All cases of plagiarism will be reviewed by the office of the Dean of Science. Penalties for such offences can be found on the [ODS webpage](#). If you are unsure of the expectations regarding academic integrity (how to use and cite references, how much collaboration with lab- or classmates is appropriate), please ask your instructor.

Deferral Policy

Please consult the university's policies for [deferred term work](#) in case of any unexpected events.

SCS Computer Laboratory

Students taking a COMP course can access the SCS computer labs. The lab schedule and location can be found at: <https://carleton.ca/scs/tech-support/computer-laboratories/>. All SCS computer lab and technical support information can be found at: <https://carleton.ca/scs/tech-support/>. Technical support staff may be contacted in-person or virtually, see this page for details: <https://carleton.ca/scs/tech-support/contact-it-support/>.

Graduate Academic Advisors

The Graduate Advisors for the School of Computer Science are available in Room 5302 HP or by email at grad.scs@carleton.ca. The graduate advisors can assist with understanding your academic audit and the remaining courses required to meet graduation requirements.

University Policies and Rules

For information about Carleton's academic year, including registration and withdrawal dates, see [Carleton's Academic Calendar](#).

Pregnancy Obligation. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit [Equity Services](#).

Religious Obligation. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit <https://carleton.ca/equity/focus/discrimination-harassment/religious-spiritual-observances/>.

Academic Accommodations for Students with Disabilities If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. For more details, visit the [Paul Menton Centre](#) website.

Survivors of Sexual Violence. As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: carleton.ca/sexual-violence-support

Accommodation for Student Activities. Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, see [the policy](#).

Student Academic Integrity Policy. Every student should be familiar with the Carleton University student academic integrity policy. A student found in violation of academic integrity standards may be awarded penalties which range from a reprimand to receiving a grade of *F* in the course or even being expelled from the program or University. Examples of punishable offences include: plagiarism and unauthorized co-operation or collaboration. Information on this policy may be found [here](#).