

Instructor

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Course Web Page

Copies of all handouts, assignments and notes will be posted as appropriate on the course Web page. The address for it is <http://www.cs.wpi.edu/~cs525d/f12/>.

Purpose

This is a graduate-level course studying current issues with online privacy. This concept is both important and elusive as our lives have an increasing online presence in areas such as commerce, social relationships, information sharing and health. Privacy issues have gained the interest of law makers, regulators and the media. In this course we will study the privacy implications of this online shift primarily using research studies and papers, but also via privacy laws, regulations and technologies.

The goals are 1) to familiarize the student with current literature and work in the area, 2) for students to be able to place work in its context in terms of its relative importance and relationship with other work, 3) to give students experience in making public presentations, and 4) to develop students' ability for critical thinking and discussions concerning design choices, tradeoffs, and their consequences.

Prerequisites

Graduate or upper-level undergraduate standing with an interest to read and discuss issues in online privacy.

Text Book

There is no required text book for the course. Relevant books are:

1. *Privacy, Information and Technology*. Daniel J. Solove and Paul M. Schwartz, Wolters Kluwer, Third Edition, 2011.
2. *Online Privacy*. Robert Gellman and Pam Dixon, ABC-CLIO, 2011.

3. *Understanding Privacy*. Daniel J. Solove, Harvard University Press 2008.

4. *Privacy and Big Data*. Terence Craig and Mary E. Ludloff, O'Reilly, 2011.

They provide reasonably up-to-date discussions on issues in online privacy. Some material from these sources will be introduced in class.

Much of the course will also be based on seminal and current literature in the field. Literature will be selected both by the instructor and the students. Access to this material will be discussed in class.

Grading Policy

Final grades will be computed as follows:

Homework: 35%;

Final Project and Presentation: 30%;

Final Exam: 25%;

Class participation: 10%.

Final grades will reflect the extent to which you have demonstrated understanding and insight for the material. No incomplete grades will be assigned unless there exist exceptional, extenuating circumstances. There will be one final exam. There will be one final project that may or may not involve programming.

Class meetings will consist of discussions. Each student should be prepared to pose and answer questions on the day a paper or topic is discussed. When reading papers you are expected to take notes on the main points of each article, questions concerning its contents and suggestions on how the described research can be followed up. You should try to discern the strengths and weaknesses of the paper. After reading the paper, you should write a summary of the paper along with questions and suggestions for followup (roughly a page or so). It is important to include your personal thoughts on the paper concerning what you liked or disliked about the paper. An excellent review will include a summary containing the key points of the paper along with personal observations of the paper.

For your own benefit you should maintain an online bibliography of the papers you read. The bibliography should contain papers you read for the class and any other references of interest that you come across as you read or peruse the literature. These entries will provide ideas for further reading for the course.

Late Policy

You are expected to keep up with the pace of papers for the course. Entries turned in late will be penalized 5% of total assignment value per day or partial day. All entries are due at the *start* of class on the due date. Those turned in after the start of class will be counted late. Exceptions to these rules can be made only *a priori*. Finally, no entries will be accepted after the last day of class to allow sufficient time for grading.

Cheating

Unless explicitly noted, all work is to be done on an individual basis. You are encouraged to talk with others about ideas and material in the course, particularly in preparing for exams. However all work, in the form of reviews, code or answers to problems, you submit for grading must be your work. Misrepresentation of the work of another as one's own submitted work is a violation of academic honesty. Aiding someone else to commit an act of academic dishonesty is also a violation. Submitting individually-assigned work that was jointly done with another person is a violation of academic honesty.

Any violation of the WPI's guidelines for academic honesty will result in no credit for the course and referral to the Student Affairs Office. More information on definitions, responsibilities and procedures regarding the WPI academic honesty policy can be found at <http://www.wpi.edu/Pubs/Policies/Judicial/sect5.html>.

Schedule

The following is a tentative outline of the material that will be covered in this course.

week 1: 8-27. Course outline, contents, grading policy, introduction, and overview.

Papers to read: [74]

Other papers of interest: [73, 50, 6, 16].

week 2: 9-10. Third-Party Tracking of Browsing Behavior

Papers to read: [55, 70].

Other papers of interest: [71, 7, 46, 28, 45].

week 3: 9-17. Leakage of Private Information to Third Parties

Papers to read: [82, 42].

Other papers of interest: [24, 54, 33, 83, 47, 20, 43].

week 4: 9-24. Privacy Protection Tools and Techniques

Alternate homework assignment.

Other papers of interest: [4, 1, 35, 26, 62, 67, 68, 72, 76, 11, 52, 81, 53, 18, 34, 44].

week 5: 10-1. Linking Information

Papers to read: [86, 19].

Other papers of interest: [64, 9, 56, 39, 38, 75, 37, 48].

week 6: 10-8. Privacy Preservation

Papers to read: [22, 30].

Other papers of interest: [10, 17, 63, 21, 29, 32, 5, 23, 77].

week 7: 10-22. Privacy and Economics

Papers to read: [2, 69].

Other papers of interest: [66, 40, 12, 25, 65, 79, 27, 3, 13, 85]

weeks 8-14: 10-29 – 12-10. Other issues:

Extraction of Private Information: [51, 36, 78, 41, 15, 59, 60].

User Attitudes: [61, 49, 14, 84, 57, 58, 8, 31, 80].

Mobile Platforms. [33, 83, 47]

Regulation and Policy.

Privacy Literature

We will be reading articles from Computer Science related journals and conference proceedings. Three primary publishers of CS journals and conference proceedings are ACM (www.acm.org), IEEE Computer Society (www.computer.org) and USENIX (www.usenix.org). Each of these has their own digital library, which is a prominent link from each of these organization's home page. WPI is a member of each of these organizations and access from a machine on the WPI campus will allow download of all articles from ACM and IEEE. If you are off-campus, then you can use the WPI library proxy (<http://www.wpi.edu/Academics/CCC/Help/Software/proxy.html>)

to gain access to these repositories. USENIX allows access to most of their collection without a password. If you need to access a collection that is less than a year old then a member password may be needed. Contact the instructor to obtain the WPI password.

Articles are also available in the journals and proceedings themselves. The following lists sources that contain privacy related material.

ACM Conference on Computer and Communications Security
IEEE Symposium on Security and Privacy
New Security Paradigms Workshop
Privacy Enhancing Technologies Symposium
Security & Privacy
Symposium on Usable Privacy and Security
Usenix Security Symposium
Web 2.0 Workshop on Security and Privacy
Workshop on Economics of Information Security
Workshop on Online Social Networks
Workshop on Privacy in the Electronic Society

Other journals and conference proceedings not listed here may also contain relevant material.

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