SENG310 HCI: Class Project Description

Introduction

In recent years the computers and communication technologies started a new era in distance learning, students no longer need to physically attend classes to obtain degrees from thousands of universities and colleges around the world. Distance learning is often more convenient and less expensive for many students, and educational institutions can leverage scarce and valuable resources into additional sources of revenue. However, distance learning is not without problems:

- Exam cheating greatly increases when students are taking exams at home or are being monitored by proctors who don't know them.
- Also, instructors have no way of knowing if their students are actually spending time online to learn course materials. With new financial aid guidelines, this is becoming a more pressing issue to address.
- Identity and Access Management (IAM) issues continue to be at the forefront of higher education IT administration concerns. New regulations must be met, and a variety of IT security programs need to be put in place, to deal with identity theft in distance learning.
- Protecting e-learning services from unauthorized access. Students can share their credentials with other un-enrolled students to allow them to access non-free services.

Today students' assessments in online exams, courses or any online programmes offered by universities or any educational service provider are facing the challenge of e-Cheating. Universities and academic institutions have to maintain academic Integrity in online education and fight against academic dishonesty. In general, evaluation in online education is problematic for the following reasons:

1. The instructor's inability to identify if the student is actually the person completing the evaluation instrument.
2. The instructor's inability to control the student's use of unauthorized materials while completing the evaluation (e.g. textbook, e-books, internet, etc)
3. The possibility of students' collaboration.
4. Technical difficulties (computer "crashes", LMS issues, etc).
5. The lack of face-to-face interaction between the students and the instructor or the exam proctor.

The computer and software industry attempted to respond to the above challenges and difficulties to maintain academic integrity in online education by helping both instructors and students and satisfy

their requirements. Using ideas from different disciplines (computer vision, artificial intelligence, biometrics, etc) they are attempting to provide online proctoring system (OLP). The OLP will help universities ensure the security of their proctored exams and courses. An OLP monitors student's activities during online exams and courses by authenticating the test taker and alerting the proctor/instructor if there is anything suspicious. It allows the instructor to define the policies of the course/exam evaluation and enforce these policies. At the same time it must ensure a convenient and productive educational environment. The main objective of OLP is to provide continuous authentication for student and test taker in online education.

Requirements

Your project is about designing an Online Proctor System (OLP) that supports student evaluation in online educational systems. You are free to constrain your project to a specific class of evaluation (e.g, online exams, course work evaluation). However, your project should emphasize the use of continuous authentication to verify the identity of the test/course taker and how the different users (instructor/proctor/students) interact with the system and with other users through the system.

Suggestions

- The project is a team work. You need to assign, coordinate and manage your work. Your lab times will serve as   meeting times. Some work will need to be done outside the lab.
- Focus on interaction design, learnability and usability.
- You won't be marked on your code. Some level of functionality is expected at the end of your project; however, this functionality will be important just for supporting your design ideas.
- Be creative without forgetting user needs
- Make the most out of the three iterative prototyping milestones (June 10, July 2 and July 29)

Marking Scheme (percents are from the final course mark)

- Lab Assignments (Term Project)   40%
    - Assign 0 (Establish group)   0%   May 17
    - Assign 1 (User & Task Analysis)   5%   May 31
    - Assign 2 (Paper Prototype)   5%   June 10
    - Assign 3 (Software prototype)   10%   July 2
    - Assign 3 (Cognitive walkthrough)   3%   July 10
    - Assign 5 (Heuristic Evaluation)   3%   July 20
    - Assign 6 (User Evaluation)   10%   Aug 2
    - Presentation   4%   July 30 and Aug 2

The final report as well as the final presentation and demo will be marked differently for every student in the team by considering team assessments. The team assessments need to be provided at the same time with the final report.

Research Assignment

[3%] Write a short survey (3-5 pages) of related work/commercial applications in the area of authentication in distance learning [due date May 31] at the class. You may survey some of the project readings materials that are posted on the website or refer to other related papers (at least 3 papers or commercial applications must be discussed in your survey).

Bonus points:

The final presentations and demos will be considered as competition between teams. Each team will have a dual role: design experts demonstrating their final product, and usability experts judging the design solutions provided by other teams.

Your written evaluation on the OLP interfaces presented by the other teams will count 3% of your final mark and will be part of your class participation mark. This evaluation will be performed according to specific criteria to be provided by the instructor.

The competition results will be based upon a combination of the following:

- Instructor evaluation
- Input from our users
- Evaluation of class students (according to strict criteria to be provided by the instructor)

1st ranked team members: 3 bonus points (3% of final course mark)

2nd ranked team members: 2 bonus points (2% of final course mark)

3rd ranked team members: 1 bonus point (1% of final course mark)

Additional prizes such as chocolate and candy will be awarded as well.