MIDDLE EAST TECHNICAL UNIVERSITY, NORTHERN CYPRUS CAMPUS
CNG542 Human Computer Interaction

# Term Project

**Date handed-out: October 20, Wednesday, 2021**

**Purpose:**
The main purpose of this assignment is to practice topics learnt in the course and also manage a full process.

**Objective:**
The main objective of this term project is to practice and gain experience with a particular Human-Computer Interaction (HCI) problem. In particular, your term project needs to focus on design, develop and evaluate an interface. Your project should fit in one of these main themes:

- Speech based interfaces
- Vision based interfaces
- Multimodal interfaces
- Intelligent interfaces (e.g., interfaces that involve user modeling, AI, etc.)
- Gesture based interfaces for mobile devices

You are free to choose your topic as long as it involves one of these major themes. This is a semester long project, so please choose one that you find interesting or is related to your MSc thesis.

**Overview:**
Project can be conducted in a team of two or three. If you wish to work individually, please consult with me first. At a high level, your term project will have the following two parts:

1. Part 1 will involve the following tasks:
    a. Identify team & topic
    b. Define the problem
    c. Your project proposal should fit in one of the main themes given above;
    d. Describe tasks, users, environment, social context
    e. What components will be in your design?
2. Part 2 will involve the following tasks:
    a. Discuss design alternatives
    b. Storyboards, mock-ups for multiple different designs
    c. Explain decisions
    d. Semi-working interface functionality
    e. Implement prototypes
    f. Plan for conducting evaluation
    g. Evaluation: Conduct evaluation with example users (2-3 users), characterize what's working and what's not

**Requirements:**
The term project has three deliverables:
(1) project proposal report (20%) which will main report the findings of part 1 explained above.
(2) project final report (60%) which will mainly report the findings of part 2 explained above.
(3) project presentation (20%)
These will be described in detail below and the deadlines will be given on odtuclass.

**1) Project proposal report**
The main goal of this step is to finalise your decision on the topic, team and also have an understanding of the related work and literature.
You need to write your review in a report written with Latex. You can use Overleaf to write your report. Please use IEEE Transactions journals and conferences template which is "IEEETran", and available here: https://www.overleaf.com/org/ieee (2 column format needs to be used). Your proposal report should include the following parts:

- Abstract – Summarizes the motivation and the goals of the work. It should be limited to a single paragraph.
- Motivation/Problem Statement – Present the motivation and the team members. A description of the problem area and task you would like to work on. It is critical that your problem is well-defined.
- Related Work – Discuss related work. You need to clearly explain and discuss the related work in the literature to your project. Please ensure that you give the full bibliographic details of the papers you are referring to including the DOIs.
- Proposal and objectives – Present the objectives of your proposed project. In particular, you need to explain the tasks, users, environment, social context of the proposed user interface.
- Risks – A description of the risks associated to your proposal.
- Workplan – A short description of the proposed project timeline and also the workload sharing among the group members.

**2) Project final report**
You need to write your final project details in a report written with Latex. You can use Overleaf to write your report. Please use IEEE Transactions journals and conferences template which is "IEEETran", and available here: https://www.overleaf.com/org/ieee (2 column format needs to be used).

Your report needs to have the following structure:
- Abstract – Summarizes the paper and the goals of the work. It should be limited to a single paragraph.
- Introduction – Briefly describe the problem that you are addressing or your motivation, the purpose of your project, and what has been done in the literature, the dataset you have used, the method you have applied, and an overview of your findings.
- Related work – Description of the problem and problem domain, this should be the review of the related work. Other related works completed related to your work.
- Design – Describe design alternatives along with storyboards, mock-ups for multiple different designs and clearly explain your decisions.
- Implementation – Explain how your designed UI components are implemented. If they are not fully implemented clearly justify the reasons.
- Experimentation Methodology– Description of procedure/method, participant details, metrics used for evaluation.
- Results – Present the results of your experimentations and your overall findings.
- Discussion – Discuss your findings and also future directions and ideas as to how to extend and enhance the approach/application proposed.
- Conclusion – Explain your major findings and their importance.
- References – Include references to related work including references to implementation strategies or libraries used. For example, if you are using a particular library, there should be a reference, and possibly references to specific algorithms and metrics.

**3) Project presentation**
The main objective of the presentation is to experience how to make public speech to explain the research and the work you conducted. Your presentation will be probably between 15-20 minutes. Details will be announced later.

Your presentation can have the following outline:
- introduction (~1-2 slide(s)),
- overview of related work (~1-2 slide(s)),
- description of design and implementation(~2-3 slides),
- evaluation methodology (~1-2 slide(s)),
- results (~2-3 slides),
- discussion (~1-2 slide(s)),
- conclusion (~1-2 slide(s)),

**Resources:**

Here I will give you two types of resources: (1) resources on how to choose a topic; and (2) how to write a report.

**1) Choosing a topic**

Checking out the following would be a good tip to search for a topic:

- You can check out for recent publications in relevant venues. You can also check best papers in conferences or highlighted articles in these journals. Those can give you an idea about the topic to work on:

  Most relevant conferences:
  - Computer Human Interaction (CHI): https://dl.acm.org/conference/chi
  - International Conference on Intelligent User Interfaces (IUI), https://dl.acm.org/conference/iui
  - ACM Conference on Pervasive and Ubiquitous Computing (UbiComp), https://dl.acm.org/conference/ubicomp
  - MobileHCI: Human Computer Interaction with Mobile Devices and Services, https://dl.acm.org/conference/mobilehci
  - ACM/IEEE International Conference on Human-Robot Interaction, https://dl.acm.org/conference/hri
  - IEEE Virtual Reality Conference, http://ieeevr.org/
  - International Multimedia Conference, https://dl.acm.org/conference/mm
  - IFIP Conference on Human-Computer Interaction, https://link.springer.com/conference/interact

  Related Conferences:
  - Hypertext and Hypermedia, https://dl.acm.org/conference/ht
  - Accessibility, ASSETS: https://dl.acm.org/conference/assets
  - Web Accessibility, W4A: https://dl.acm.org/conference/w4a
  - Web and Information Retrieval conferences: WWW, SIGIR, WSDM: https://dl.acm.org/
  - Natural Language Processing: ACL (Computational Linguistics), NAACL (Computational Linguistics), HLT (Human Language Technologies)
  - Digital Libraries and Information Science: JCDL (Digital Libraries)
  - Computer-Supported Collaboration and Learning: CSCW (Computer-Supported Collaborative Work), CSCL (Computer-Supported Collaborative Learning)

  Journals:
  - International Journal of Human-Computer Studies, https://www.journals.elsevier.com/international-journal-of-human-computer-studies
  - Behaviour & Information Technology, https://www.tandfonline.com/toc/tbit20
  - Interacting With Computers, https://academic.oup.com/iwc
  - International Journal of Human-Computer Interaction, https://www.tandfonline.com/toc/hihc20
  - Computers in Human Behavior, https://www.journals.elsevier.com/computers-in-human-behavior
  - ACM Transactions on Computer-Human Interaction (TOCHI), https://dl.acm.org/journal/tochi
  - IEEE Transactions on Affective Computing, https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=5165369
  - IEEE Transactions on Human-Machine Systems, https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=6221037

- Check out Interactions magazine which always has articles related to the recent trends in HCI: https://dl.acm.org/magazine/interactions.

**2) Write a report**

Some useful resources on report writing:

- Writing Tips, Do's and Dont's, https://online.purdue.edu/blog/communication/graduate-level-writing-tips
- Writing guidelines, https://birg.cs.wright.edu/resources/writing/
- Academic Writing, https://www.languagecentre.manchester.ac.uk/resources/online-resources/online-skills-development/academic-english/academic-writing/
- Academic Phrasebank, http://www.phrasebank.manchester.ac.uk/

**Submission Instructions:**
You need to submit your reports to odtuclass.