F28ED User-Centred Experimental Design

Crowd-sourcing experiment based on an Interaction with a Chatbot

1. Coursework description

You will be designing a chatbot that can interact with humans. Being interactive is the only criterion. Other than that, it is entirely up to you what the chatbot's purpose is and how it interacts. **Don't spend a lot of time/effort on a complicated implementation**, that is not the goal of the assignment. We will ask you to use two variants of your chatbot in a controlled experiment to be conducted online during Week 9.

Your experiment participants should interact with your chatbot long enough to form an opinion of it. So a 1 or 2 turn interaction is a little too short. However, long interactions will require a very complicated chatbot, so they should also be avoided.

You can find information about the software framework we are asking you to use to implement your chatbot on Vision under Chatbot Material. Deviations from this software setup (such as using a different chatbot authoring tool) must be pre-approved by the course instructors. We encourage you to use this framework as it has been tested and will provide a platform to deploy your chatbot for the experiment.

2. Marking Scheme

Component	Percentage	Due Date
1. Experiment Plan and Protocol	10%	Thursday Week 5 (15:30 pm 15/10/20)
1. Experiment Questionnaires and Forms	5%	Thursday Week 7 (15:30 pm 29/10/20)
2. Expo	10%	Week 9 ****experiments run throughout week****
3. Expo Data Analysis	20%	Thursday Week 11 (15:30pm 26/11/20)
4. Group scientific report	20%	Thursday Week 12 (15:30pm 3/12/20)
Total Group Coursework	**65%**	
Individual Quizzes	15%	
Exam	20%	

We do not want to confuse you with a complicated marking scheme but want to provide you with an experience that reflects the reality of designing and evaluating an application (team-work, background research, reflection, testing, experiment design, and data analysis). As a result, we do ask you to do quite a lot of light teamwork, not all of which is assessed. You will have a chance to work on your idea in most of the online live sessions, and we will drop in on your groups to give feedback and answer questions.

Group Participation and Peer Marking

Your coursework mark will be moderated according to peer review forms from other members of your group. At the end of the semester, you will assess your team members' contribution to the project (Report and Expo). This will be anonymous feedback and will be used to moderate your mark. The peer marking form is available on Vision and should be submitted through Vision by the final deadline, which is **Thursday 3rd December 15:30.**

Mark each person in your group out of 20. Here are the sorts of issues you should consider when deciding to allocate the marks.

- Behaviour during group meetings: Does the team member join in with suggestions and ideas? Does he/she pay attention? Does he/she listen carefully? Is he/she too critical?
- Communication skills: This refers to communication with group members face-to-face, by email, text or on group discussion boards, attendance in class activities.
- Amount/quality of work contributed to the group: You can decide here how to allocate the marks between effort and quality. Some group members may have contributed one very good idea but not much other work, and others may have been doing lots of less original work. You should judge how much their overall performance was of value to the group.
- Time management: When your group set internal deadlines for design tasks.

Attendance

Attendance for this class is key. Importantly, during most online sessions, we will be working in groups. If you don't attend, you won't contribute to the group work, this is not fair on your group and will result in a poor peer review mark!

3. Coursework Stages in Detail

See the Assessment section of Vision for marking schemes for each part of the assessment.

3.1 The Experiment Plan and Protocol - GROUP (due week 5): This coursework is to make sure you receive feedback on your Expo experimental plan, understand the ethics of your experiment, and .

Task: Produce the following documents (see templates/examples on Vision)

1. Complete Experiment Plan form
2. Complete first draft of experiment protocol

Benefits: This exercise will ensure potential ethical issues or experimental design errors are identified early in the course.

Submission: submit through Vision by **15:30pm on Thursday 15th October** (week 5). One per group.

3.2 The Experiment Questionnaires and Forms - GROUP (due week 7): This coursework is to make sure you receive feedback on your questionnaires and forms prior to the experiment.

Task: Produce the following documents (see templates/examples on Vision)

1. Any/all questionnaires you will have participants fill out
2. Consent form
3. Ethics form

Benefits: This exercise will allow us to check your questionnaires for correctness and readability. Ensures that you have a valid consent and ethics form for your experiment.

Submission: submit through Vision by **15:30pm on Thursday 29th October** (week 7). One per group

3.3 The Expo – GROUP (Week 9) Your experiments will be deployed online throughout Week 9. Classmates will take part in your experiment as participants. You will also be expected to participate in your classmates' experiments. During the week, your course instructors will also participate in each experiment. Your group will receive a mark and feedback for the deployed experiment.

Outcome: Each group conducts an experiment and gathers data. Your classmates, instructors, and other members of the HW community will participate in your experiments online.

Task: The task is to evaluate your design. The assessment is focused on your experiment design but also the overall presentation and enthusiasm. Although this is a fun activity, you must take care to gather data using valid and ethical methods.

Benefits: You will again receive a lot of feedback from this session beside your mark. This session will allow you to collect all the necessary data you need, so as to provide the lecturers with analysis in your group report.

3.4 EXPO Data Analysis – GROUP (Week 11): This coursework is to present your statistical analysis of your EXPO data for feedback before the final report.

Task: Conduct the statistical tests and data analysis that your group will present in your final report. Create any graphs that you will use to summarise your data. You will be required to submit your data and commented R code.

1. Data analysis and graphing in a commented R markdown file.
2. Complete expo data in a separate file (loaded by your R code)

Benefits: This will allow you to receive feedback on your analysis before the final report. Data analysis is an essential skill and will be used later in the curriculum e.g. in the honours project.

Submission: Through a Vision **by 15.30 on Thursday 26th November** (Week 11).

3.4 Scientific Report - GROUP (due Week 12): This exercise is a written presentation of your experiment as a scientific report. Template report is on Vision.

Outcome: A summary of your work as a group throughout the semester in the form of short scientific paper. This should be between 4-6 pages not including references and appendix and can be generated in Word or Latex.

Task: The task is to report your design activity from generating an idea, to developing a concept, designing its potential implementation, experimental method, results and analysis. Scientific papers should be referenced throughout. Templates and examples will be on Vision. You will have a chance to learn about scientific writing in weeks 10 and 11 and have chance to get feedback on your drafts in week 11 in class.

Benefits: The main benefit of this activity is to actually realise how much work could be achieved when working as part of a team towards a common design vision. You will also learn scientific rigour and how to write up your results in a scientific manner. This will stand you in good stead for your honours project.

Submission: Submit your group project final report though Vision (one per group) **by 15.30 Thursday 3rd December (Week 12).** Submit your individual peer review sheets through Vision by this deadline also.

We look forward to interacting with your designs!