

CSCM69 – Human-Centred Perspectives and Methods

Coursework 2, 2020

Introduction

In Coursework 1 you conducted a literature review and then critiqued your own experience with a tool in that area, using this process to inspire and drive innovation. Drawing on personal experiences in this way is a common approach taken to inform human-centred design, and has advantages, but also brings pitfalls. It is also not a luxury that you will always have. In Coursework 2 you will be taking the research and design process further, but focusing on insights and experiences from other people — i.e., existing and potential future users — to drive your thinking and innovation.

The core task in this coursework is to design and build an interactive system that amplifies the human experience. In order to do this, you will first conduct another individual review and critique — i.e., a survey of existing devices, services, apps and research — in a relatively broad domain area (see list, below). Next, you will interview people whose use these sorts of services, using this process to help you find both positive aspects and shortcomings, and to identify potential design areas to work in. Finally, working as a group (2 × 4 people; 3 × 3 people), you will design, implement and evaluate a human-centred innovation in that domain.

A ‘twist’ is that your innovation must be created as a voice-driven interaction (e.g., Amazon Echo/Alexa, Apple HomePod/Siri, Google Home/Assistant, etc). I can provide one Echo Dot appliance per group to help you get started with development. However, you are welcome to use a different voice-based service or device if you prefer. Note also that many of these services can be used from mobile apps – for example, most of Alexa’s skills work just as well in the app as on the appliance.

Your focus in this coursework will be on one of the following three domains of interest:

work-life balance | sport / fitness | self-expression / creativity

Full details of the tasks and deliverables in both the individual and group elements are outlined below. However, one important point to emphasise is that while the group element of the coursework will build on the work done for the individual element, it is important that the individual part is done on your own. I do suggest that you first meet as a group to discuss and decide upon the domain of interest that you will be working in (i.e., to ensure that all members of your group select the same broad area), but please then make sure to work alone until the start of the group element. This structure will both help you come up with a diversity of perspectives on existing work; and, ideally, lead to a range of different design ideas to use as starting points for the group element. It will also help strengthen the assessment part of the work, which you will all be participating in (see below).

The individual part of this coursework is worth 40% of CSCM69, and the group part is worth 25%. The final 10% of the module will come from your participation in the assessment of the other components. The aim is to simulate the peer review that you will all likely experience at some point in the future, and to help prepare you for the highs, lows and challenges of that process.

Specification: Part 1 (individual – 40%)

After your group has selected a domain of interest, you should undertake the following tasks individually (and without reporting back to your group):

1. Find out what key existing apps, services and devices are widely used in the domain of interest that you have chosen. For example, this might include fitness trackers, creativity support apps or other domain-specific services. As a guide, I would expect you to find around 3–5 tools here.

2. Investigate these tools, critiquing their design. Draw on previous research literature both to support your analysis and to provide examples of other approaches. Remember that your goal is to amplify the human experience, rather than simply focusing on increasing productivity, speediness or other metrics. What is it about the domain you are investigating that makes it a special part of being human? What do these tools do to emphasise this? What could they do better?
3. Design an interview with users of the key tools you discovered in task 1, then — making sure to comply with Covid-19 restrictions — recruit and conduct this interview with at least five separate people (*not* other people taking CSCM69). Make sure to take notes or record the sessions (with permission) to help with your write-up. Analyse your findings: what works? What is missing? What conclusions or design implications can you draw?
4. Write up your results, linking both the background work and the data gathering you have undertaken, drawing out key findings. Use these insights to suggest potential areas where you could innovate. These ideas do not necessarily have to be voice-driven at this stage, but it would help for Part 2 if you were able to identify at least some potential areas of interest for a voice system.

Deliverables

The deliverable for the individual component of this coursework is a report, no more than five pages long (not including references), written in the style of a conference paper. As for Coursework 1, use the CHI Proceedings template that is available on Canvas to format your report. As with the previous coursework, you can remove or ignore the “Author Keywords” and “CCS Concepts” sections of the template, but your work should otherwise be formatted as a written report, including figures/tables/references as applicable, and an introduction and conclusion. Five pages is a maximum rather than a target, but you may find that you need more space than you did for Coursework 1 due to the data gathering aspect, hence the increased page limit. There is no need to try to fill all of this space if you do not need it.

A new requirement for this second coursework is that your submitted report must be anonymous, to allow for peer review as part of the assessment process (see below). You should not provide your name or other identifiable details in the header or title of your report, or in its metadata.

The deadline for this part of Coursework 2 is 23rd November 2020, and you should upload your work as a PDF file via the submission page that will be created on Blackboard.

Specification: Part 2 (group-based – 25%)

Your challenge in Part 2 of the coursework is to take the background work that you have done individually in Part 1, and build on this to create an actual working interactive voice service in the domain you originally chose. To do so, you should complete the following tasks:

1. Meet in your group, either in person or virtually, and present to each other the key tools, user findings and design areas that you discovered in the individual element of the coursework.
2. Discussing together all of the background work and results that you have collected so far, select the most promising resulting area in which you could build a voice service. Then, program a voice-based interaction (i.e., in Alexa terminology, a ‘skill’) to provide support in this area. You may use either the Echo Dot provided, or a similar voice-based service or appliance of your choice. Again, remember while doing this that your goal is to enhance the human experience, rather than simply to provide a basic voice-driven interaction.
3. Design and conduct a study to evaluate your prototype (again making sure to comply with current Covid-19 restrictions). What are your hypotheses? How will you record and/or assess interaction with your system. What tradeoffs will you need to make? How will you provide a realistic experience? How many participants will you need to study?

4. Analyse and discuss your results. What do they reveal about your prototype (or the activity)? How could you improve your design (of both your voice service and your study)?

Deliverables

The deliverable for the group component of the coursework is a presentation in the style of a conference talk. You should present a brief summary of your initial findings (combined from the individual group members' work); describe the design of *and demonstrate* — either live or in pre-recorded video form — the voice-based system you have created; and, report on your user study.

Your talk should be no more than 20 minutes in length, followed by extra time for questions. At academic conferences the time allocated for questions is typically 5 minutes or less, but as part of the assessment I expect that this might last around 10–15 minutes.

You may wish to look at some sample conference talks as part of your preparation – see, for example, the following conference session videos: <https://www.youtube.com/user/acmsigchi/playlists>. There are many other talk videos on both the SICGHI channel and other conference pages. Please note that there are both good and bad examples available, however!

All of your group members must play an active part in the presentation. Please note that you are also all expected to attend the other groups' presentations, and to take an active part in asking questions and assessing the other talks (see below). I am also considering recording the presentations to be used as part of a portfolio of your work – please see me if you feel strongly about this.

All group members will receive the same presentation mark unless there are exceptional circumstances. If there are any problems with the group task that you are unable to address within the team you *must* tell me as the task progresses. I *cannot* tackle any issues if they are only raised at the end of the work.

The provisional deadline for this presentation is 22nd January 2020. Please note, however, that this is the *last possible date* for scheduling the presentation session, and we may need to shift to an earlier date in January due to examination and/or other clashes. I will schedule a presentation session and confirm the final deadline once the examination timetable has been released.

Assessment (individual – 10%)

In order to give you practice and experience of the whole research process, you will each be asked to review another person's individual report; and, to participate in marking the group presentations.

Deliverables

For the report component, this activity will be double-blind. That is, neither you nor the person whose report you are reviewing will know each other's identity (hence the anonymity requirement for the submitted report). You will need to complete a simple review form that I will provide, highlighting positive aspects of the report and suggesting areas for improvement, and also provide a score.

The due date for your report review is 30th November 2020. An anonymised version of the review form that you complete will be given to the person who wrote the report that you are assessing. I will review all of the reports and reviews, and provide my own report feedback along with a final mark.

For the presentation component your reviews will be single-blind (that is, you will know the presenting group's identity, but they will not know yours). Again, you will complete a simple review form, but in this case I will curate a summary of all comments to give to each group in order to provide an overall picture, rather than handing back multiple separate review forms. The presentation review

will be done in realtime (i.e., you'll need to submit the review forms by the end of the presentation session), and you will be asked to do this for two of the other four groups.

Each aspect of the review process is worth half of the assessment part of this coursework. That is, if you submit one satisfactorily completed report review form (5%), and two satisfactorily completed presentation review forms (2.5% each), you will be given a total of 10% of the CSCM69 marks.

Final considerations, additional support and marking scheme

You will be conducting user studies as part of this work, and as such it is important that you complete an ethics assessment for both the individual and group aspects of this coursework. You can access the College of Science system at <https://science.swansea.ac.uk/intranet/safety/ethics>. Due to Covid-19, I expect that much of the user study work you do will be virtual, but it is also possible to safely conduct in-person studies. In most cases you will find that the basic study registration is sufficient, and you can proceed without further review. If this is not the case, please come and see me first to talk about your study design.

As always, I'm happy to run other support sessions to help with this task. Please let me know in the CSCM69 lectures and we can arrange suitable times (or I can answer questions in the lecture itself).

The marking scheme for this coursework is the same as for Coursework 1 (see below). A larger version of this is available in the CSCM69 section on Canvas.

Level	Knowledge	Understanding	Skills	Critical analysis	Reflection
70–100% In principle, publishable quality	Comprehensive knowledge of Human-Centred Perspectives and Methods that is current and extends beyond essential materials. Extensive, appropriately-used background material. Potential new or extended knowledge.	Clear evidence of applying and interrelating knowledge relevant to the problem at hand. Strong internal relations, e.g., of theory to practice as appropriate to the coursework.	Clear ability to select appropriate techniques and skills to solve a problem. High literacy and coherent organisation of the coursework. Strong evidence of largely independent, self-directed work.	Original ideas, insights or critical thinking. Clear analysis and construction of arguments. Excellent use of and synthesis of ideas. Strong structure.	Strong element of self-awareness and critical evaluation of own work. Assessment of contribution to the discipline. Objective justifications of opinion.
50–69%	Comprehensive knowledge of essential ideas in Human-Centred Perspectives and Methods. Good background work and understanding of course resources.	Significant application of knowledge to the problem at hand. Thorough grasp of concepts. Good relation of theory to practice.	Good ability to select appropriate techniques and skills to solve a problem. Good literacy and reasonable organisation. Evidence of own initiative and independent work.	Good analysis and critical arguments. Occasional uncritical reliance on accepted arguments. Good structure.	Reasonable self-evaluation and assessment of value of contribution. Justified opinions.
30–49%	Undergraduate-level, incomplete knowledge of ideas in Human-Centred Perspectives and Methods. Some relevant background material.	Some ability to apply knowledge and identify appropriate concepts. Some relation of theory to practice.	Limited selection of techniques or skills. Some problems with language and attempts to organise ideas. Considerable guidance or direction given.	Informed evaluation of facts but no real independent analysis. Reasonable structure and argument.	Incomplete or sketchy evaluation of work. Opinionated, without justification.
0–29%	Lack of essential elements of Human-Centred Perspectives and Methods knowledge. Absence of background work.	Limited application of knowledge. No clear grasp of concepts. No relation of theory to practice.	Poor or inappropriate choice of skills. Poor language. Incoherent organisation. Little or no independent working.	Uncritical dependence on facts or published arguments. Descriptive rather than argumentative. Poor or irrelevant structure and argument.	No or little self evaluation.