ECE 1778 – Creative Applications for Mobile Devices
January 2021

Assignment S1, for Specialists

Introduce Yourself & Connecting Your Field to the Software/Mobile Apps

The goals of this assignment are to 1) Introduce yourself to the class for the purposes of forming project groups, and 2) Gain familiarity with how *your* field has already leveraged mobile/wearable devices, and to stimulate your thinking about new applications.

<u>PART I</u>

A key part of this course is to form an inter-disciplinary group to do a new and exciting application. To help form those groups, please create the following:

1. Write a 250-word description of the goals of your field of research or endeavour, written so that a layperson would understand it. If you have a more specific research activity within that field, describe that as well. You should assume that the reader is not in your field, and so does not know any of its specific terms. You *can* assume that the reader has an undergraduate-level understanding of mathematics, computer systems and programming.

2. Create a video of yourself that includes: i) A brief description of your field of expertise. ii) A quick description of the idea(s) you have for the project.   (This will help begin the key process of forming a team). iii) Quickly describe what resources you bring from your field or experience – for example, some specialists work in a lab with instruments that can be used to calibrate some aspect of a measurement. Other specialists may have job experience that relates directly to their field, which can be useful, such as being a teacher or a musician or a medical professional. **The video should be no more than 2 minutes long.** Upload this video to YouTube, and publish it as 'unlisted' (which means someone must have the link to it to see it).

3. Next, go to the Piazza website for this course, and click on the **specialist_intros** folder. (You'll see a video of the instructor in that folder, under the title 'Welcome Specialists!') To do this, go to the **Piazza** course website (instructions for how to enroll into the Piazza are given in an announcement on Quercus) and click on the **specialist _intros** folder at the top left of the site. Click the 'new post' button, and insert a new 'post.'   You should place both your written text (from (1) above) and a link to your YouTube video (from (2) above) into this post. Don't forget to paste in your written answers to part 1.

This is due on Tuesday January 19th at 6pm. Sooner is better, though! A penalty will be levied if late. See below for Part II.

PART II - Case Study

Mobile devices have been available for over a decade now, and the two main app stores now contain many interesting ideas. There may be many apps already in your field! Go to the online App Stores (the Apple App store, and the Google Play app store) and find the best 5 applications in your field, and give a brief description of each: 100 words each. Those 100 words should say: i) What the app purports to do, and ii) Your brief analysis of how well it appears to do it. Next, choose the best of them, preferably one that has some reasonable complexity to it, acquire it, and use it. (This assumes you have a phone you can run it on; talk to the instructor or the TAs if this is not the case). Write a case study of that app, maximum of 1000 words, not including pictures. The case study should contain the following sections:

   (1) A description of the motivation and goal of the app.
   (2) Say why you chose this app - i.e. why you thought it was good.
   (3) Describe how it works – using screen shots and a description of what is going on under the hood. Make it clear if the app connects to other resources on the internet, and what the purpose of those resources are (for example, it should be clear if data collected from the app is being used and distributed elsewhere). Be sure to identify which sensors are being used in the app, if any, and identify how they are being used. Sensors include the microphone, camera, accelerometer, gyroscope, proximity detector, etc.
   (4) Give three suggestions on how the app could be improved.

The total word count is 5x100 + 1000 = 1500. Please count the words in your document (not including the cover page) and put the total on the cover page. There will be a penalty of 1 mark off for every 10 words over the limit. You must also calculate the penalty as well, and put that on the cover page.

Marking Rubric

For the 5 short reviews: 1 mark each for a total of 5. In each App that you review, you *must* indicate how each App is connected to your field, and give a well-reasoned assessment of how well the app works.

For the longer Case Study review, a total of 5 marks. The grade will be based on the four points specifying the case study above: 1 mark for (1), 1 for (2), 1.5 for (3), and 1.5 for (4).

To Hand In

For Part I: Due Tuesday January 19th at 6pm, as described above.

For Part II: Due Tuesday January 26th, 6pm. Marked out of 10, 0.5 marks off every hour late. What to submit: A PDF document to the Quercus Assignment S1. External Specialists without Quercus access should submit via email to the instructor.