**Expert Template**

Student name: Laikh Tewari

Week of: May 7, 2018

Date and time of “meeting” (in-person or otherwise): Thursday May 10, 2018 at 10:00am

Name and title of expert: Cristen Anderson, Software Developer at Google

Short responses: 3-4 sentences each

1. What aspects of your primary mode did you talk about? How did the conversation go?
   1. From my research into various machine learning models, I wanted to understand the differences different models and how I should choose which one is best for me. I also wanted to know how best to design and tune my algorithm. Cristen discussed the scope of my project, suggesting that the deep dive into comparing different models’ efficacy in solving this problem, while very interesting, may take away from the goals of designing a practical app. She recommended that I don’t spend too much time working on perfecting the design of an algorithm, which means picking one that can be implemented (relatively) quickly without losing too much on performance. She also told me that gaining a solid understanding of how to fine tune an algorithm also would detract from producing an app, and so I should try experimenting with various designs and going with one that works well enough.
2. What aspects of your secondary mode did you talk about? How did the conversation go?
   1. Since I have never written a paper on computer science before, I wanted to know how to approach it. Cristen recommended starting a design document and sent me to a Medium article discussing what to include in it. The article includes a detailed description of what types of things should go into the document in order to thoroughly cover the theory, software, and big-picture in order to allow experts to fully understand the project as well as offer non-experts to understand the key takeaways.
3. What question(s) did you ask your “expert”?
   1. What are random decision forests and what are their benefits/drawbacks over deep neural networks?
   2. How do I optimize hyperparameters for any model? “Grid search”?
   3. Do you have any suggestions for methods of preprocessing?
   4. Do you have any advice on how to write a good CS paper?
   5. Are there any really good papers that I should look at to use as a model for mine?
4. What advice/ feedback did your expert provide you with?
   1. Cristen told me that I had researched the theory behind the project in great depth. She recommended looking into the background of implementing machine learning on iOS. She also recommended looking into certain models, but ultimately said I should pick one and see what happens. She also gave recommendations and resources for how to structure a paper, as well as how to constructively write as I go in order to make the end paper easier.
5. What are your next steps based on the feedback you received?
   1. Based on the feedback I received, I will look into the models she recommended, and pay special attention to DNNs and CNNs. I will also look into theory of implementing ML on iOS. Once I have completed my research, I will begin building the shell of the app, including the UI with access to the camera as well as helper functions ready to extract text from the image and translate Hindi to English. I will write up my ideas in a design document to better structure my thoughts and project.