

Project Title: Cleft Lip Aesthetics Tool

The project is about determining the success of cleft lip and palate surgeries. Through the use of a mobile app, paediatric plastic surgeons should be able to evaluate the aesthetic outcome of the surgery by determining how symmetrical the lips are. The user should be able to draw around the lip region of the target image and then receive a set of symmetry scores, determining the successfulness of the surgery. This would replace the previous, subjective method of having a panel of people determine success.

The original intention was to produce a mobile app in either iOS or Android but a cross platform app that works on both platforms as well as on computers may be more practical in a hospital setting. There shall be further investigation into whether this would be feasible through technologies such as Cordova or Framework7. A cloud based side of the application is also expected to be built. The post-operation images will be uploaded there and the user shall be able to download their selected images. Once the images are saved locally, there needs to be a feature in which the user can draw around the lip regions to produce a trace. The way this will be done needs to be investigated further and could be a factor in determining platform of the app. Offline functionality for the app is a possibility with syncing at select intervals but this will likely be decided further into the project.

The final deliverable shall be an app that determines the symmetry of the lips from a patient's image to determine the success of the surgery. Through the use of good coding practices and clear documentation, the app should be easily adjustable by other people so as to build upon the solution as further research is done into the area. There should be a user manual for the app to allow the user to easily work out how to use the app with minimal training.

A 100% satisfactory solution will be a multi-platform app with offline features and a link to the cloud. There should be an intuitive way in which to draw around the lip regions to determine symmetry scores. Drawings of the lips and symmetry scores should be uploaded to the cloud once determined so they can be viewed and compared with other users. This can occur through the use of a syncing feature. Multiple lip drawings should be possible on the same face for comparative purposes and differences in symmetry from these noted. Data on the cloud should easily be extracted for future analytical work.

The minimum that needs to be accomplished is to provide a single platform app that features a method of drawing around the lip region of a given image.

I hope to be able to successfully produce a cross platform app with the features working no matter the device being used. Professional report writing is a necessary skill which I hope to build upon from previous years to produce a piece of work that is to a high standard. Working individually on such a large project means I want to have the planning stages be successful to ensure I can stay on track once I am in the development phase.