Tell us what your idea is.

Describe in 250 words what the feature or service will do and how you'll use Machine Learning to push the bar:

The app will monitor the emotional state of the child and give an indication to the parent if the child is happy, sad or depressed without disclosing any private information that the child may have on the phone. The app will make use of the front camera to take picture at random intervals and use on device machine learning to predict the emotional state of the child.

My long term plan for this app it to include the user input as well and put that through sentiment analysis to also determine the mood and emotional state of the child. This together with the camera input will have a much higher accuracy in predicting the mood and warning the parents of depression or long bouts of sadness.

Tell us how you plan on bringing it to life.

Describe where your project is, how you could use Google's help in the endeavor, and how you plan on using On-Device ML technology to bring the concept to life. The best submissions have a great idea combined with a concrete path of where you plan on going, which should include:
- *(1) any potential sample code you've already written,*
- *(2) a list of the ways you could use Google's help,*
- *(3) as well as the timeline on how you plan on bringing it to life by May 1, 2020.*

This project is still just an idea, but this is an idea that I know can change and even save lives.

This app will have two different sections, the parents monitoring section and then the client program running on the child's phone.

The development timeline of the app can be broken down into the following sections:

Design (December 2019 - 1 January 2020)
- Design the screen layout and document the apps functionality.
- Do a detailed design on all functionalities and the database that will support it.

Develop (2 January 2020 - 15 March 2020)
- Gather data to build the model for the facial mood recognition. This is where I will make use of Tensorflow to build a deep learning model. Accuracy for facial mood recognition models have achieved over 97%. I will be looking to build a similar model accuracy at least.
- Develop the initial client app to take photos and show on screen the result for verification of the mode.
- Develop the monitoring app from where the parents can monitor the clients. Here I will make use of FIrebase to store and forward events from the client to the parent and allow configuration changes from the parent to be pushed to the client.
- Modify the initial client app to run silently in the background and send updates on the moods experienced Firebase where it will send it to the parent.

Testing (16 March 2020 - 30 April 2020)
- Get friends and family to test the app and give feedback.
- Correct or improve on any valid recommendations or problems.
- Try to improve on the model during the testing phase.

Delivery (1 May 2020)
- Deliver a life changing app to Google!

How I could use Google's help
- Mentorship in building a stable app with industry best practice. Especially where it comes to securing the data.
- Advice on how this app could become part of the Google Family link app. I do believe it could be a great added feature for this.
- Advice on how the best practices for getting your app into Google Play and get it seen.
- Overall mentorship in developing professional apps with a great user experience.

Tell us about you.

A great idea is just one part of the equation; we also want to learn a bit more about you. Share with us some of your other projects so we can get an idea of how we can assist you with your project.

I have been a Database administrator and Report writer for most of my working life. I have a Btech: Electrical engineering in Computer Systems and is currently busy with a Bsc: Applied mathematics and statistics degree.
About a year ago I got introduced to Data Science and have not been able to get enough of it. I am just in love with Machine Learning and I am focusing constantly studying whenever I get the chance to make a career change to this field.

I am currently in the Google Africa Developer Scholarship program, and have made it to the last project phase. I am currently waiting to hear if I have made it to the Certification phase.(Holds Thumbs)

During this program I have developed an application that makes use of firebase, showing travel packages to users.

I have written an Android App that delivers traffic information from our Toll Roads to the phone by making use of Firebase and Python scripts on our servers.

I have recently also completed the AI Programming with Python Nanodegree Program, where we build an image recognition program. I am currently busy to now use this knowledge to train and build an image recognition Android app to identify cycads (I collect cycads as a hobby). This project however has just started.

I have programmed in different languages, depending on the problem I need to solve. I do love developing in Android and I have already a list of applications that I want to develop to solve different problems. The Scholarship program has made this possible for me.

Next steps.

- Be sure to include this cover letter in your GitHub repository
- Your GitHub repository should be tagged #AndroidDevChallenge

- Don't forget to include other items in your GitHub repository to help us evaluate your submission; you can include prior projects you've worked on, sample code you've already built for this project, or anything else you think could be helpful in evaluating your concept and your ability to build it
- **The final step is to fill out this form to officially submit your proposal.**