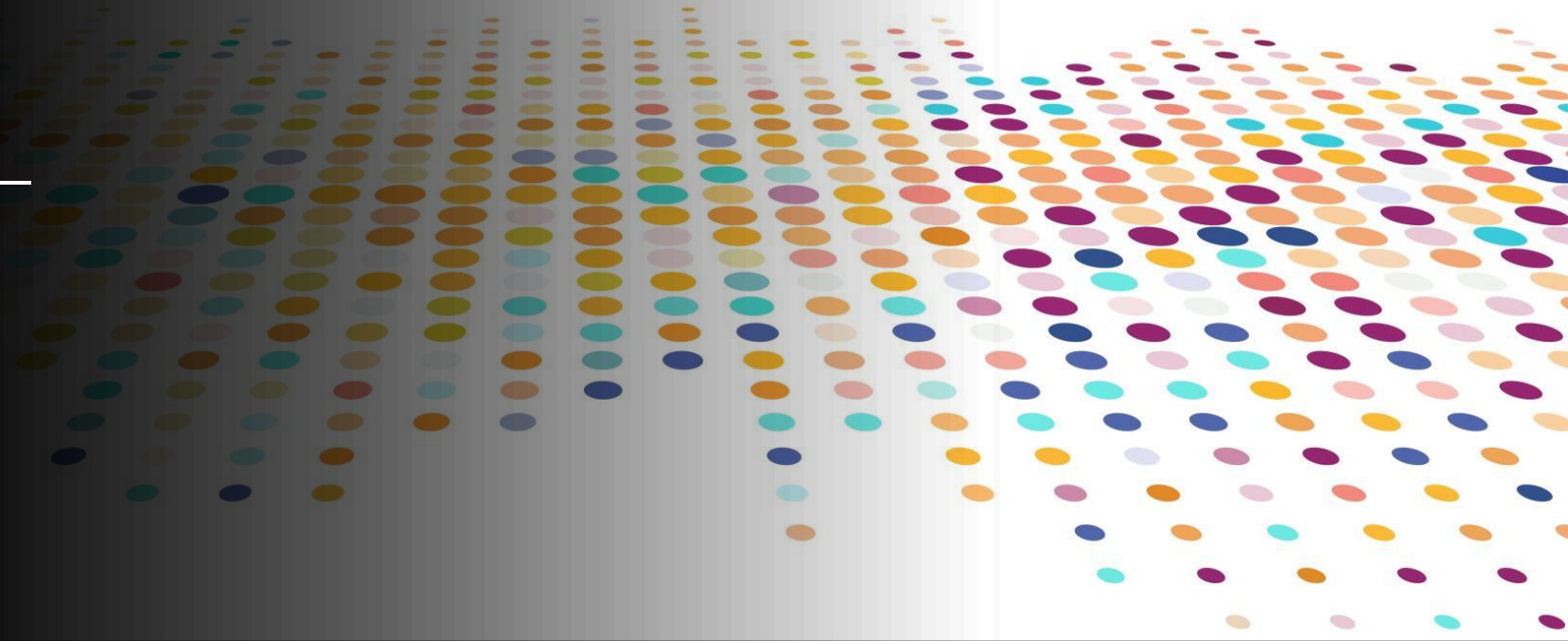
Ethical Facial Recognition

Team Rhoam:-Gianni Orlando, Shivam Chandan, Md Redwan Islam



THE GOOD:

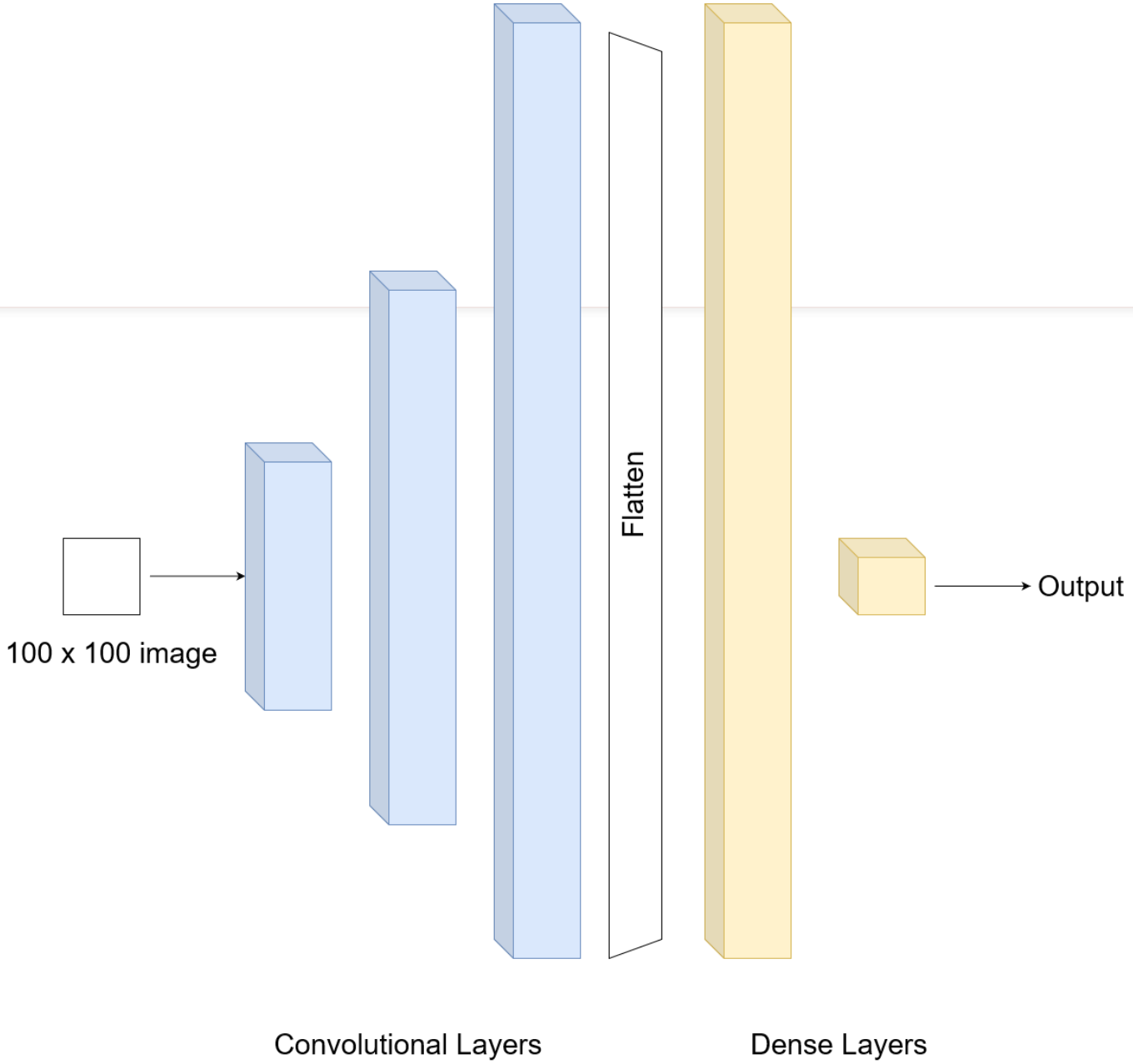
- Team have gone through research papers before formulating the solutions.
- Team Created Separate Wiki Pages for understanding research papers which will help future developers.
- To deal with the Ethics of the data we have also created a Ethics Checklist and answered all the Ethics questions on our Ethics wiki page
- Team were able to achieve 70 % accuracy.

THE BAD:

- Time was lost many time to find the correct approach
- Sometimes a bit frustrating
- GCP issues

Methodologies

- Fetch images from GC bucket using spark.read.format("image")
  - Returns image data as raw bytes in dataframe
- Preprocess images in Spark RDD and convert to numpy array for model input
  - All images resized to 100 by 100 for input
- Keras Model includes 3 convolutional layers and 2 dense layers



Results

- Preprocessing worked for training images; model achieved around 70% accuracy after 20 epochs of training
- Spark image reader threw Java Color Conversion error on a handful (around 50) of the 600k training images in the large set
  - Training took over 30 hours to run with linear loading modifications, unable to get score on larger sets

Questions?