Deep Learning Framework for Facemask Detection(CNN), Facemask Removal(GAN's), and Gender Classification(CNN)

Data Miners

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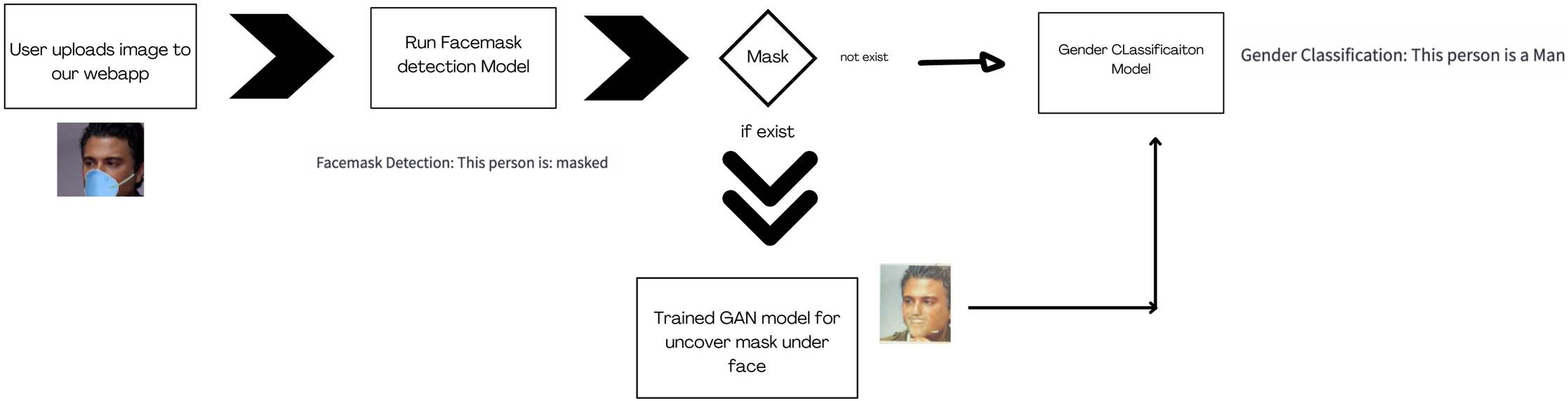
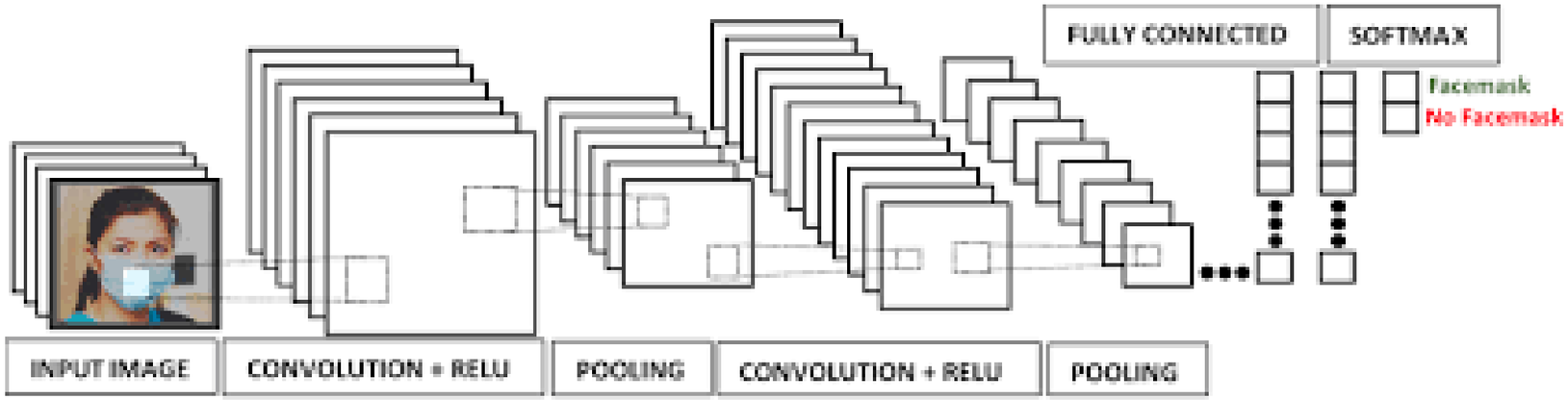
Modules

1. Face Mask Detection using CNN - PoojaShree
2. Face Mask Removal using GAN - Sharad
3. Gender Classification using CNN - Avinash
4. Cloud Deployment/MLOPS - Abraham

Application Flow



MODULE 1 – Face Mask Detection using CNN



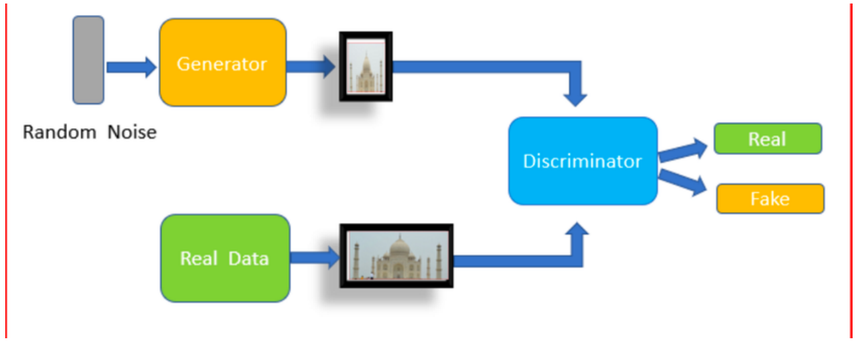
Link to Dataset:

Link to Colab:

MODULE2 - Face Mask Removal using GAN

COMPONENTS OF GAN

- GANs have 2 components a generator and a discriminator.
- Both are typically different neural networks.
- The generator learns to generate fake images, that look real to fool the discriminator.
- The discriminator learns to distinguish between what's real and what's fake.



Link to Dataset:

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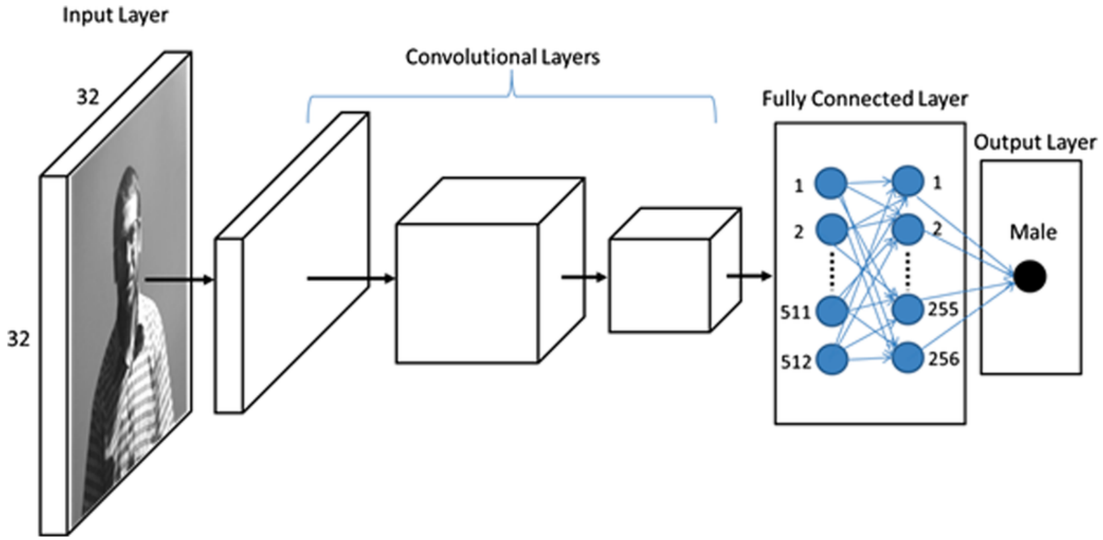
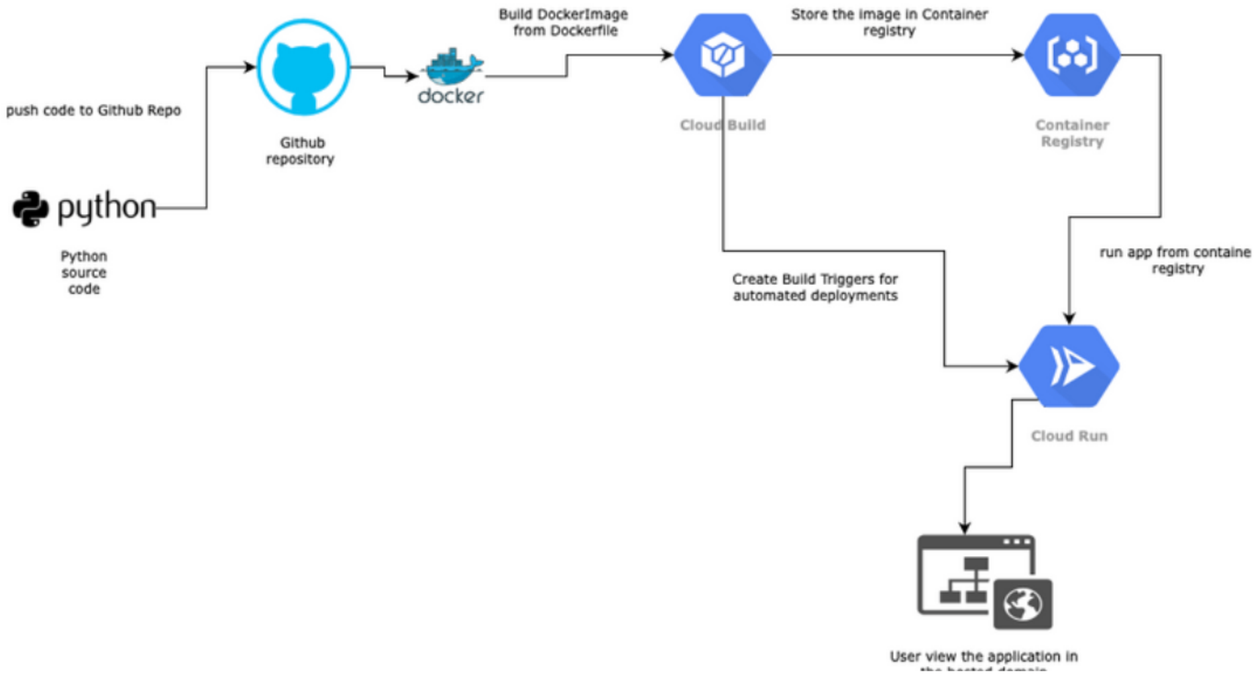
MODULE 3 – Gender Classification using CNN



Link to Dataset:

Link to Colab:

Our Deployment Architecture



Conclusion

If we increase the training epochs and train it across different images, we can significantly improve the efficacy of all the models.

SAMPLE OUTPUT

Gender Classification, Facemask Detection, and Facemask Removal

Choose a image file

Drag and drop file here
Limit 200MB per file • JPEG
Browse files

1051_N95.jpeg 206.6KB

Predict

Mask Detection

Facemask Detection: This person is: masked

Results Post Running GAN model - uncover mask under the mask

Gender Classificaiton

Gender Classification: This person is a Man


thank
you