

Capstone Project Submission

Instructions:

- i) Please fill in all the required information.
- ii) Avoid grammatical errors.

Team Member's Name, Email and Contribution:
<p>Team Member's Name : SHAFIL AHAMED</p> <p>EMAIL ADDRESS: shafil.me@gmail.com</p> <p>CONTRIBUTION : Build the model in the individual notebook, then built it in team notebook and deployed it in streamlit.share and heroku.</p>
Please paste the GitHub Repo link.
<p>Github Repo Link : https://github.com/shafilahamed/Capstone-5--Real-Time-Face-Emotion-Recognition</p>
Please write a short summary of your Capstone project and its components. Describe the problem statement, your approaches and your conclusions. (200-400 words)

So we started by choosing a project, we decided on Face Emotion Detection as both of us were very curious about transfer learning and CNNs, we started with deciding on the dataset we want to use, we found out that the most used datasets in image detection is fer2013 and we decided to go with that. The first step was to build the model file which will make a base for our project. There were multiple ways to approach this like deepface , transfer learning and keras deeplearning using CNN. We decided to go with transfer learning and the basic CNN model as the deepface model included just few lines of code. For transfer learning I used Efficientnetb2 in my individual notebook(Shafil Ahamed) and then we used MobileNet for team notebook, both of them are state of the art models , efficientnetb2 was trained by me only for 3 epochs as it was taking too much time but from what I have heard, it gave 90% accuracy in 10 epochs only, MoblieNet gave us 78% accuracy which is fairly good but because the model's slug size was pretty big and it caused problems in deployment we decided to also train traditional keras CNN model, it also gave us an accuracy of about 66.7%. after building a base model, we have to use it in a real-time framework like opencv or streamlit. OpenCV uses local camera, or a webcam on the pc it is implemented in. So we ran our model on both, got a pretty accurate output, photos of which are present in our ppt presentation. After that our final job was to deploy the project, though we learnt the process of deploying ml models in AWS but all of the primary deployment sites asked for credit cards, so at the end we had to deplot it in Heroku and Streamlit. We successfully completed all the process involved in this project.