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**Project Summary**

On

**CLASSIFYING MOVIE GENRES BASED ON THEIR POSTERS USING FASTAI**

Submitted for partial fulfilment for the degree of

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**SUMMARY**

This project aims to classify movies based on their posters into their respective genres. A movie genre is a motion-picture category based on similarities either in the narrative elements, aesthetic approach, or the emotional response to the film. The film industry is incredibly reliant upon the use of posters to advertise movies in the hopes of increasing viewership and hence profits. A good poster can convey important qualities of a film such as theme and genre to make the movie seem as appealing to as wide of a viewership as possible. We wanted to see if we could train a model to learn features of a poster that could successfully predict the genre of the movie it represents.

It uses machine learning and deep learning libraries and principles to try and achieve the goal. The project is divided into 4 main steps- creating the image database, cleaning the database, training the model and testing its performance. The project uses some functions from fastai, an open source, deep learning library, developed by data scientists and researchers at fast.ai- a non-profit research group focused on deep learning and artificial intelligence.

After creating the database, the main part of the project is to train our model. We use pre-trained libraries available in fastai for this purpose and perform transfer learning. Upon initial training using the ResNet-34 model, we see a **maximum accuracy of 70%** for the training data. This is using transfer learning. Next, we unfreeze the pre-trained weights of the model to find the optimal learning rate and train the entire model using that optimal learning rate. After training the model using the optimal learning rate, we see an **improved maximum accuracy of 71%** over 2 epochs using the training data.

Next, we cleaned the images in the dataset and trained the model again and got a maximum accuracy of 76%. Lastly, we run our model on an unseen image to see if the model works. The test image is that of a superhero movie and the model correctly classifies it as such.