# Assignment 4 (Mini project)

In my solution for the age prediction contest, I have designed an age prediction model using a deep learning framework. The model leverages a **pre-trained EfficientNet-B4** as the backbone, adapting it for regression by modifying its classifier layer. This allows us to predict age from facial images effectively.

The AgePredictionModel class inherits from nn.Module. I initialize the EfficientNet-B4 with pre-trained weights to utilize its robust feature-extracting capabilities. The classifier layer of the network is replaced with a sequence consisting of **a dropout layer** and **a linear layer**. The dropout layer helps in reducing overfitting, and the linear layer maps the extracted features to a single output, which represents the predicted age.

I use the **Mean Absolute Error (MAE)** as the loss function **(nn.L1Loss)**, suitable for regression tasks like age prediction, which directly corresponds to the competition's evaluation metric.

For training, I set the model to training mode and loop over the training data for a specified number of epochs. In each epoch, the training involves feeding forward batches of images, computing the loss between predicted ages and true ages, and then performing backpropagation to update the model's weights using the **Adam optimizer**.

The training process outputs the loss per epoch, allowing monitoring of the model's learning progress. The described approach efficiently handles the task of age prediction by leveraging a sophisticated convolutional neural network architecture, focusing on achieving a low mean absolute error on age estimation.