Abhishek Nimmakayala, Akhil kumar Baipaneni

Machine Learning 2, Spring 2020

Group proposal

Bone Age Prediction

Problem statement & Motivation

We are trying to identify the age of children from an X- ray image of the child's hand. This a regression problem and we have chosen this specific problem since it can help pediatric patients with growth or hormonal abnormalities to compare their skeletal age with their actual age to ensure they are within normal limits.

Dataset & Framework description

The dataset is obtained from Kaggle (https://www.kaggle.com/kmader/rsna-bone-age) and holds 7GB of data which is large enough to train a deep neural network. The data contains the images, the source csv file has the image id, gender, and the bone age. We aim to use pretrained models and our initial plan is to build a Convolutional Neural Network (CNN) to perform the regression. We would like to use Pytorch, Tensorflow frameworks for this project as it is more flexible with CNN's.

Metrics

Since this is a regression problem the we plan to use Mean Square error (MSE) & Mean Absolute error (MAE) as our metrics to grade the model.

Schedule

Date	Description
04/01/20	Topic Selection
04/08/20	Group Proposal Submission
04/17/20	Learning Pretrained models/ Preprocessing/ Training/ Evaluation of model
04/20/20	Complete modifications for improving the model
04/23/20	Complete Rough Project Presentation/Paper
04/25/20	Individual Papers, Adding comments to code
04/27/20	Submit Final Project in Whole