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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**

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| 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 |