Image Classification

using CNN

Problem Statement

- Need to build a Neural Network that can classify images of natural scenes around the world
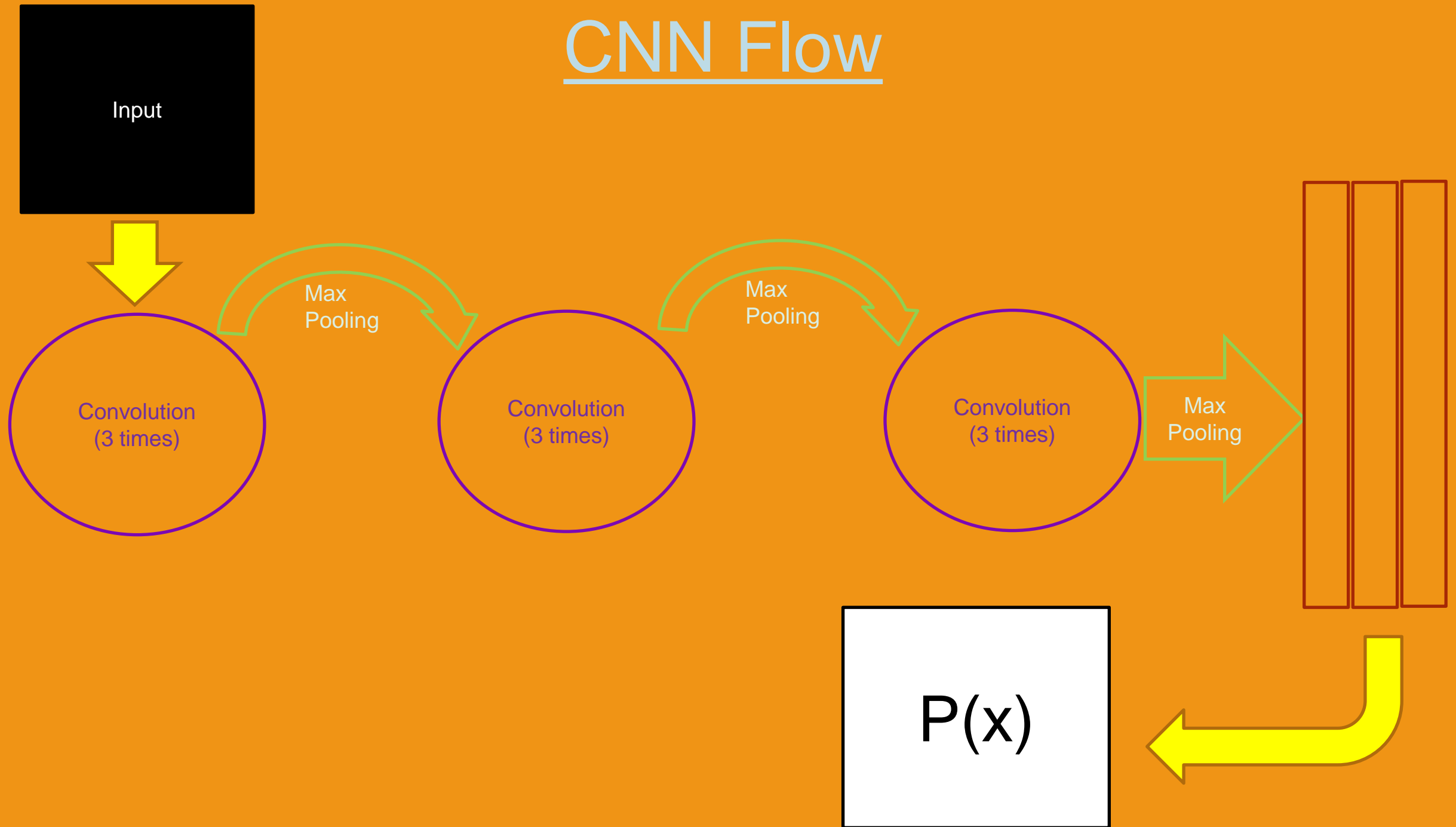
Background

- Using a CNN algorithm to train pre-classified image samples and classify untrained data with maximum accuracy.

- We used the following libraries to implement our model:
  - Pytorch
  - Numpy
  - Matplotlib

Dataset

- We downloaded and used the dataset from 'Intel image classification(Image Scene Classification of Multiclass)' provided on Kaggle

- The images in this dataset can be classified into 6 possible classes (Buildings, Forest, Glacier, Mountain, Sea, Street)

- We used
  - ~14000 images for training
  - ~3000 images for testing
  - ~7000 images for prediction

CNN Flow

Input

Convolution (3 times)

Max Pooling

Convolution (3 times)

Max Pooling

Convolution (3 times)

Max Pooling

P(x)

Accuracy

- Accuracy around 80% if learning rate is 10^-4 and accuracy is around 10% if learning rate is 10^-2

Team

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Thank You