Convolution Neural Network

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1 Introduction

The objective of this project is for us to familiarize with the framework, and the process of training a CNN model.

The assignment is to find one dataset and build a CNN model for classification.

2 Material

2.1 Dataset

The dataset for this assignment is an animals dataset from kaggle. The dataset consist of 10 classes, which are dog, horse, elephant, butterfly, chicken, cat, cow, sheep, spider, and squirrel. There are 1446, 4863, 2623, 2112, 3098, 1668, 1886, 1820, and 1862 images for the respective classes. The images are in .jpeg format with different sizes.

2.2 Tools

The assignment is complete in python with Tensorflow only.

3 Method

3.1 Preprocessing

The dataset is loaded from the directories and split to train-test with 7:3 ratio.

3.2 Model

3.3 How to add Comments and Track Changes

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1. Like this,
2. and like this.

. . . or bullet points . . .

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3.5 How to write Mathematics

LaTeX is great at typesetting mathematics. Let $X_1, X_2, \ldots, X_n$ be a sequence of independent and identically distributed random variables with $\mathrm{E}[X_i] = \mu$ and $\mathrm{Var}[X_i] = \sigma^2 < \infty$, and let

$$S_n = \frac{X_1 + X_2 + \cdots + X_n}{n} = \frac{1}{n}\sum_{i}^{n} X_i$$

denote their mean. Then as n approaches infinity, the random variables $\sqrt{n}(S_n - \mu)$ converge in distribution to a normal $\mathcal{N}(0, \sigma^2)$.

3.6 How to change the margins and paper size

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3.8 How to add Citations and a References List

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If you have an upgraded account, you can also import your Mendeley or Zotero library directly as a `.bib` file, via the upload menu in the file-tree.

3.9 Good luck!

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References

[Gre93] George D. Greenwade. The Comprehensive Tex Archive Network (CTAN). *TUGBoat*, 14(3):342–351, 1993.