

Deep Learning - Dog Breed Categorization

Realizing an native Android App using Tensorflow

Ausarbeitung
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1 Introduction

1.1 Deep learning and Machine learning

1.2 Terms of Reference

- Eingrenzung

2 Methodology

2.1 Common Frameworks for Deep Learning Applications

2.2 Qualified Models for mobile App Integration

- Mobilenet, Inception etc

2.3 Key requirements for an appropriate dataset

2.4 General Software Requirements

- Bazel, Java, Android Studio, Python, Operating System - CPU, GPU

3 Concept

3.1 Model based Architectures

3.2 Application based Architecture

4 Realisation

4.1 Installation of the software components

- software environment

4.2 Tensorflow based on Python

4.3 Tensorflow based on Bazel

- e.g. Workspace changes for Android SDK

4.4 Installing Android Studio and its Development Kit

- SDK, NDK

4.5 Retraining the pre-trained Models

- Mobilenet - Inception

4.6 Output Tests and Validation

4.7 Implementation of an native Android App

- list all necessary things to do (e.g. tensorflow version, Interpreter -> load Model)

4.8 Deployment and Validation

5 Evaluation

- prio von niedrig zu hoch - regarding implementation time - regarding performance - regarding quality in accuracy

6 Conclusion