Cene:
An Image Organisation App

By Leana Critchell

Introduction - Aims of **Cene**

Optimize Photo organisation

Privacy

- Device Deployment - No cloud uploads
- Image classification performed offline
- Model distributed with the app

Exploratory Data Analysis

Data by Intel

Data from Kaggle

24k images of 6 scenes

Building

Forest

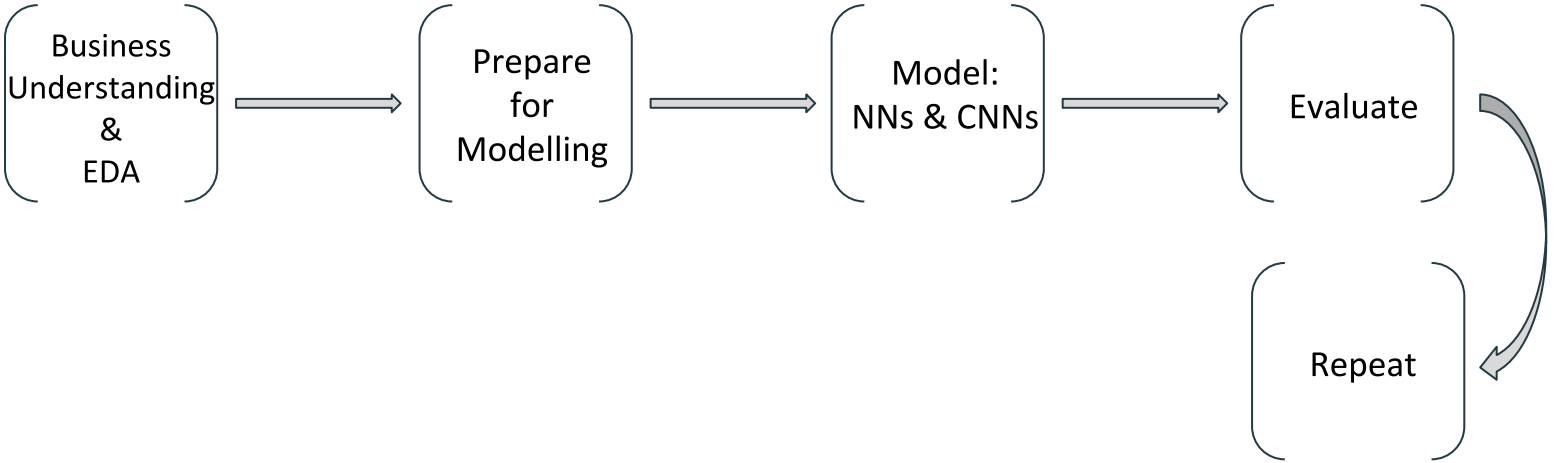
Glacier

Mountain

Sea

Street

The Process


Business Understanding & EDA
Prepare for Modelling
Model: NNs & CNNs
Evaluate
Repeat

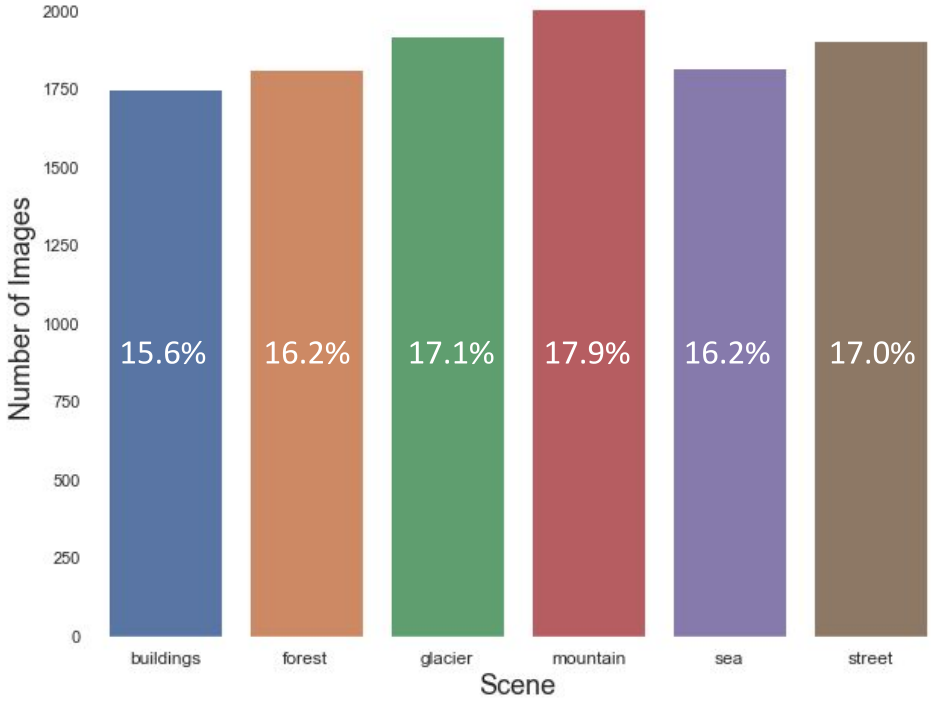
EDA

14k Color training images

256 pixels

Even Class Distribution

Number of Images per Scene
(Training Data)



Metrics

PRIORITY:

MINIMIZE MISCLASSIFICATION

FALSE POSITIVE

(Optimize Precision)

FALSE NEGATIVE

(Optimize Recall)

LEADS TO

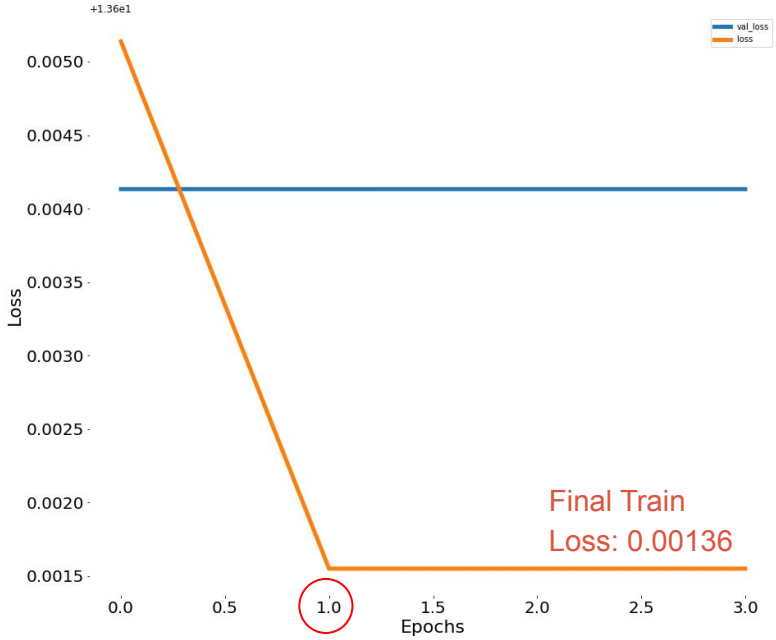
MISCLASSIFICATION

METRIC TO OPTIMIZE:

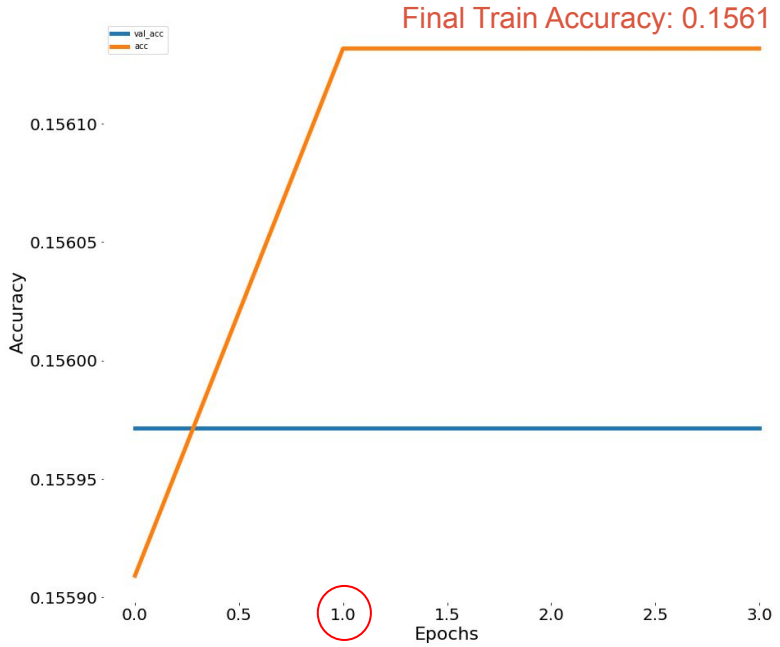
ACCURACY

Modelling

FSM Loss
Train vs. Validation

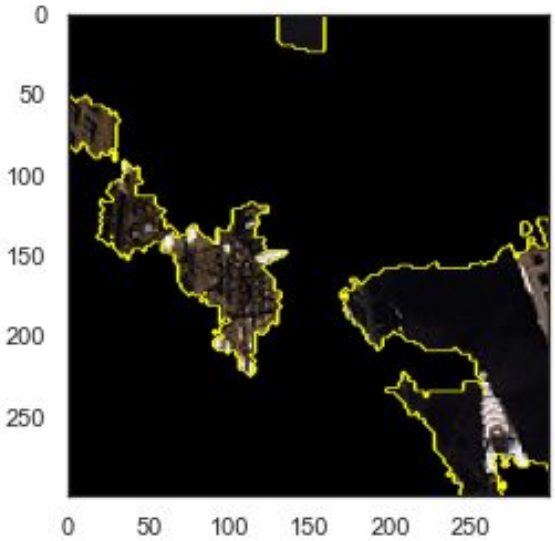


FSM Accuracy
Train vs. Validation

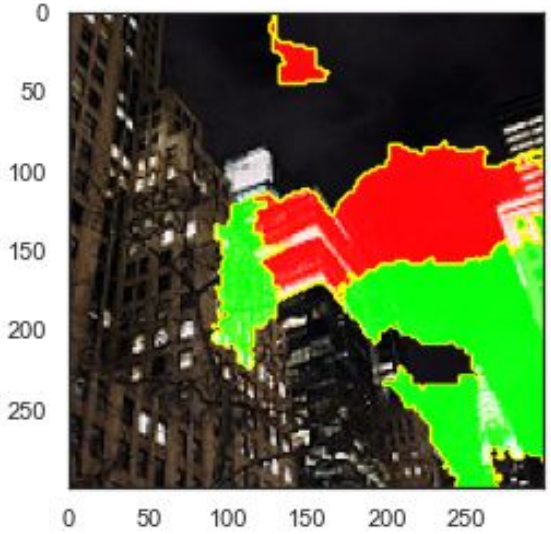


LIME Visualizations: FSM

Top 5 Superpixels of Building Image

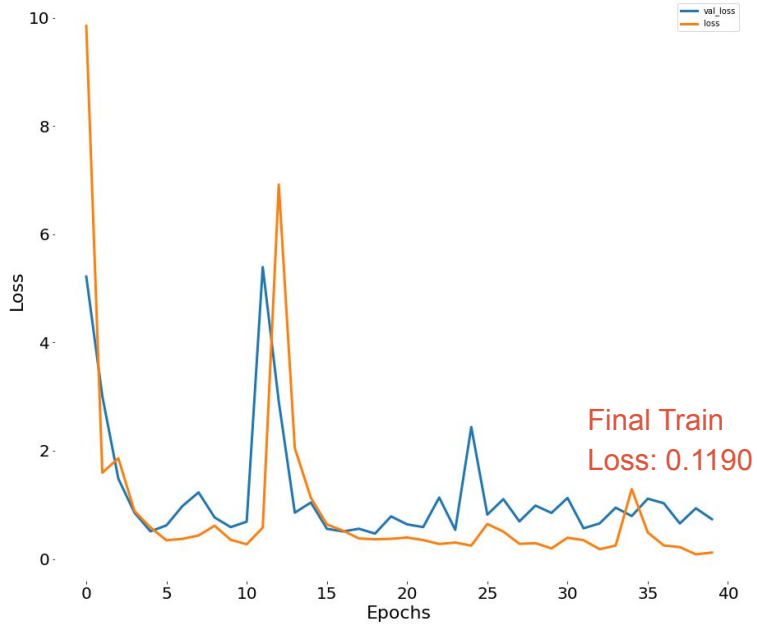


“Pros and Cons”

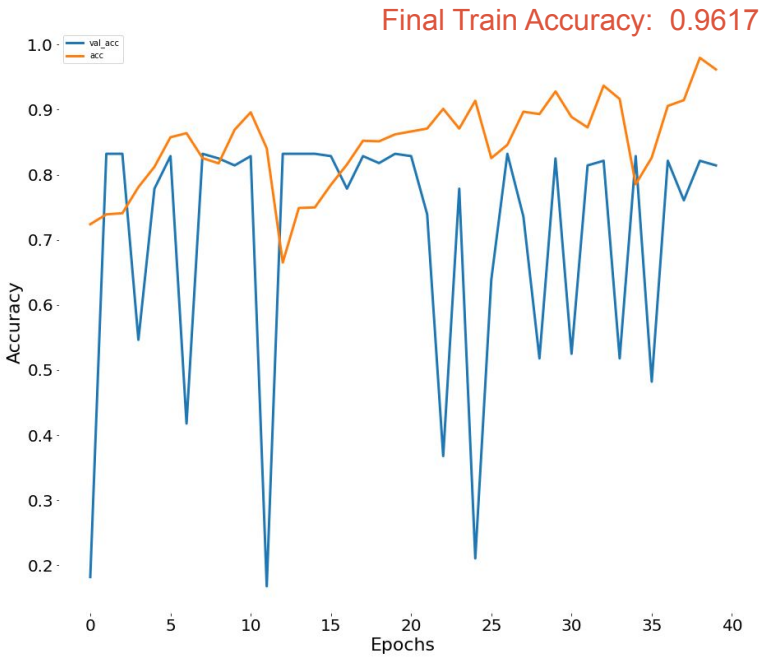


Model 2: Deep Neural Network

Model 2 Loss
Train vs. Validation

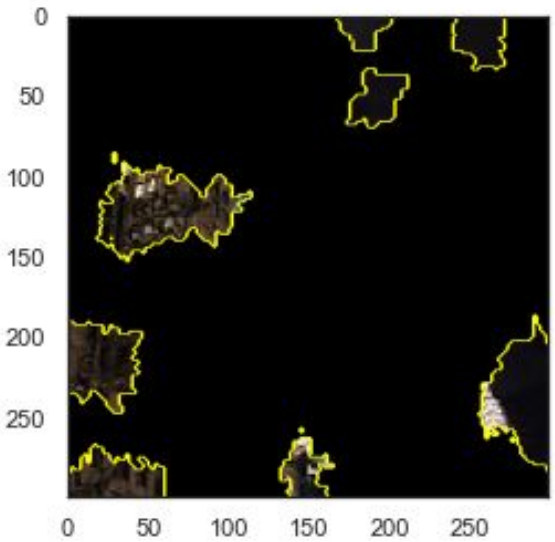


Model 2 Accuracy
Train vs. Validation

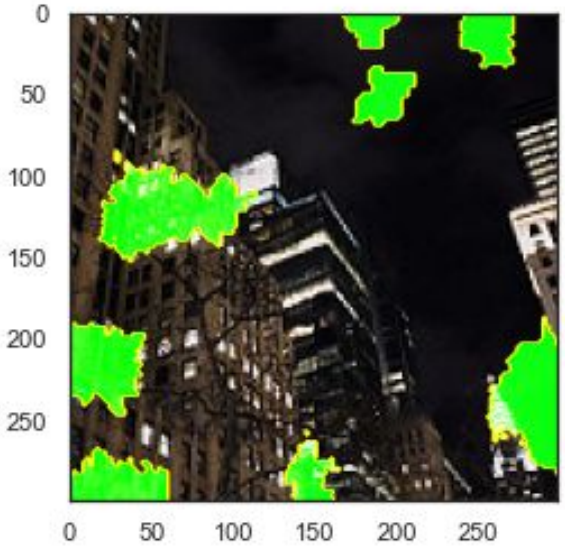


LIME Visualizations: Model 2

Top 5 Superpixels of Building Image



“Pros and Cons”



Deployment:
App Mock up

YOUR PHOTOS

FOREST ALBUM

MOUNTAIN ALBUM

GLACIER ALBUM

STREET ALBUM

Next Steps

Generate LIME visualisations (model 2)

Increase epochs for model 2

Create CNN model

Utilise Transfer Learning

Increase number of classes - more data

App Deployment/Mock up

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