



Cene: An Image Organisation App

By Leana Critchell



Introduction - Aims of Cene

Optimize Photo organisation

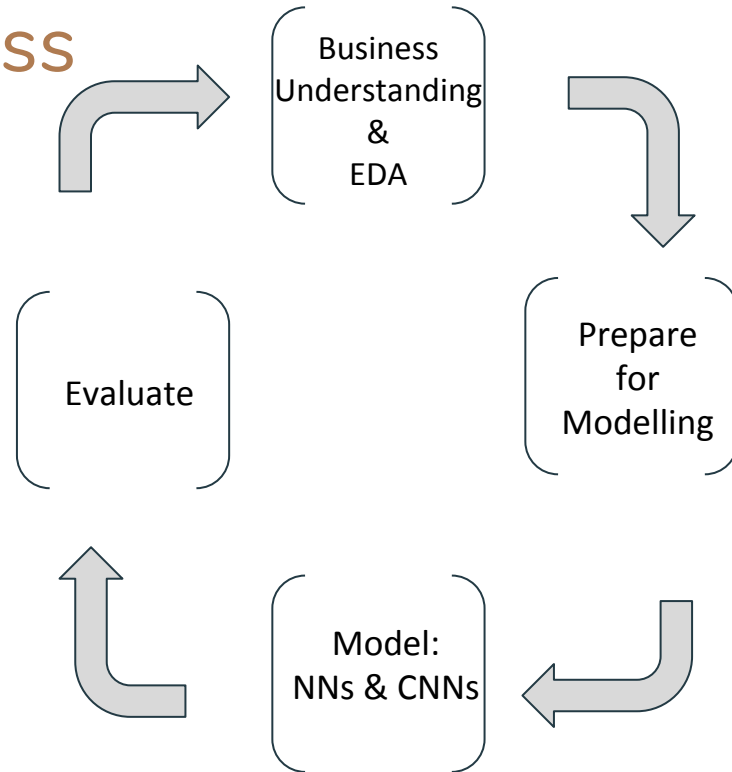
Categorize images from 6 classes

Help user organization

Employ machine learning



The Process





Exploratory Data Analysis

Data by Intel

Data from Kaggle

24k images of 6 scenes



Building



Forest



Glacier



Mountain



Sea



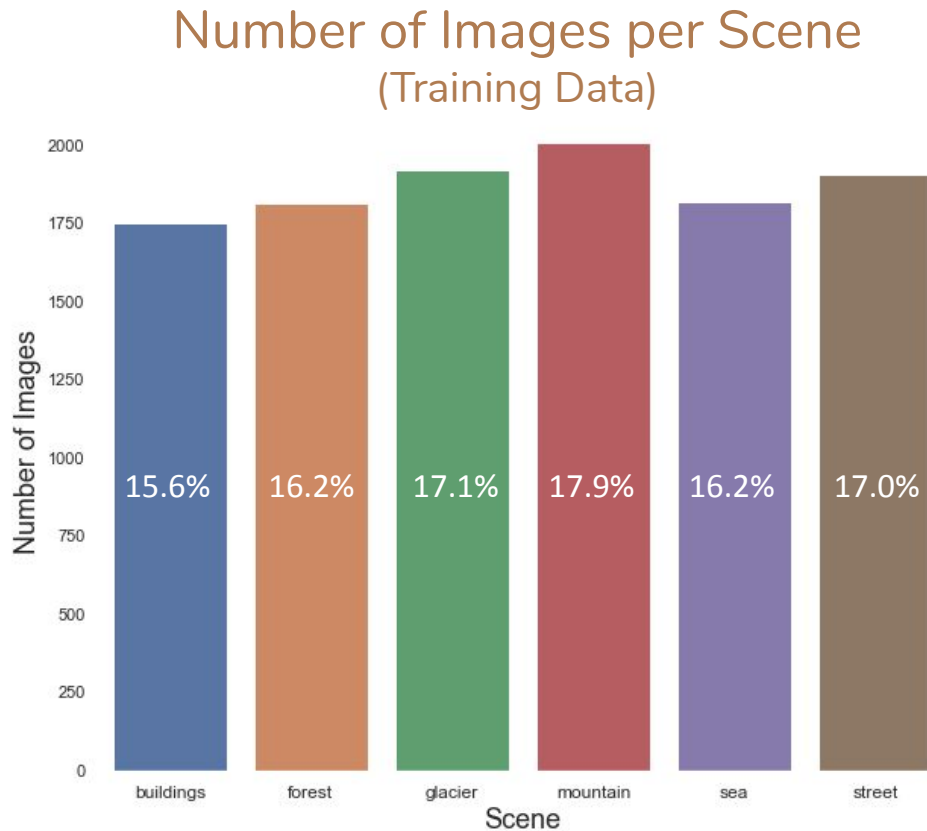
Street

EDA

14k Color training images

256 pixels

Even Class Distribution





Potential Problems: Class Similarities

Building or Street?

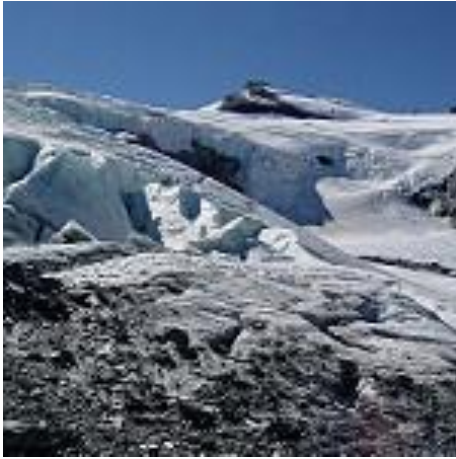


Street



Building

Glacier or Mountain?



Glacier



Mountain



Metrics

PRIORITY:
MINIMIZE MISCLASSIFICATION

FALSE POSITIVE
(Optimize Precision)

FALSE NEGATIVE
(Optimize Recall)

LEADS TO

MISCLASSIFICATION



METRIC TO OPTIMIZE:
ACCURACY

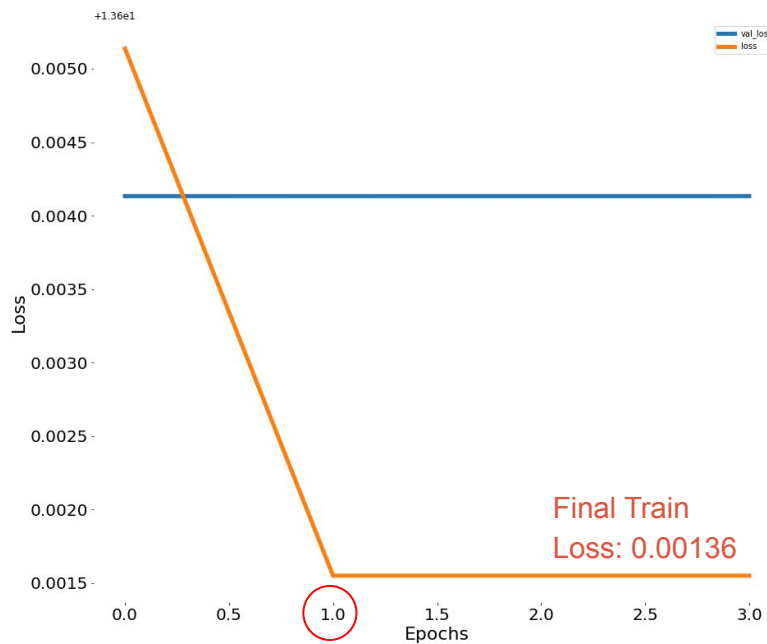




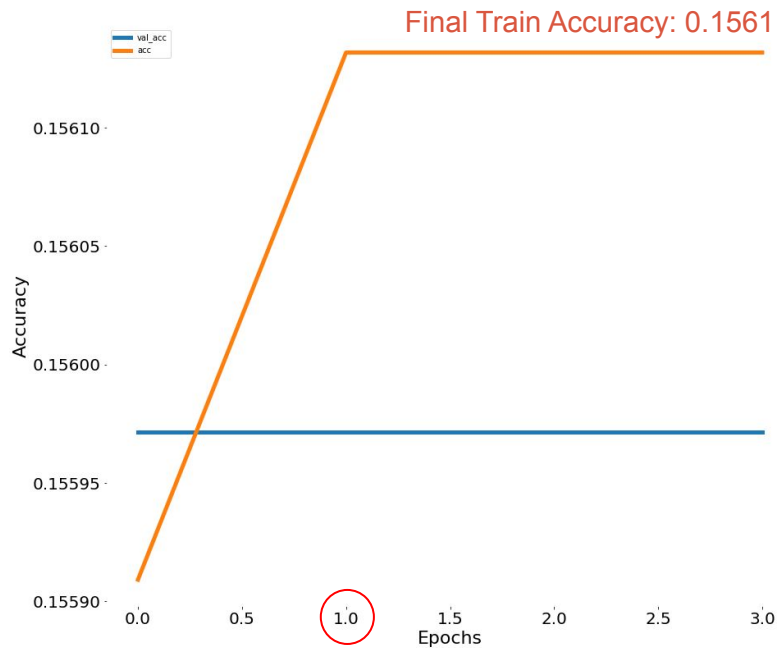
Modelling

FSM: Basic Neural Network

FSM Loss
Train vs. Validation

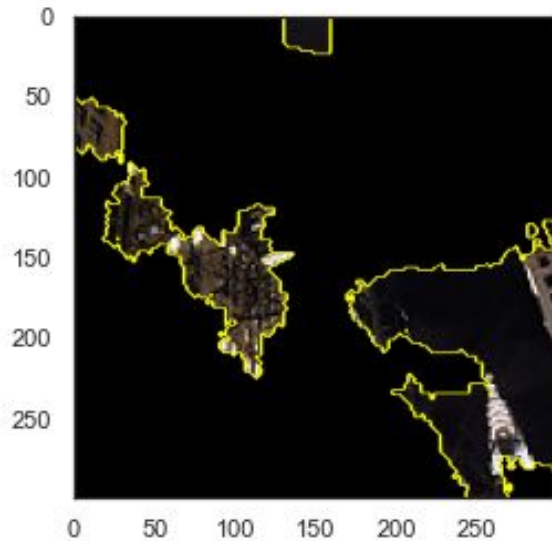


FSM Accuracy
Train vs. Validation

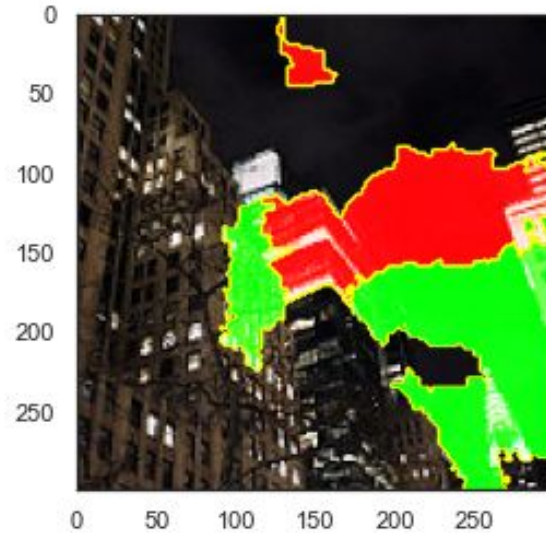


LIME Visualizations: FSM

Top 5 Superpixels of Building Image

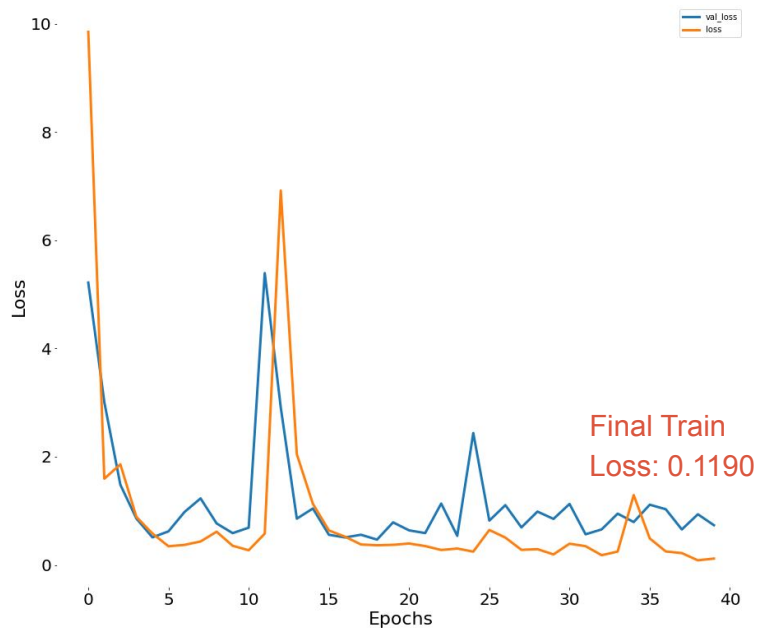


“Pros and Cons”

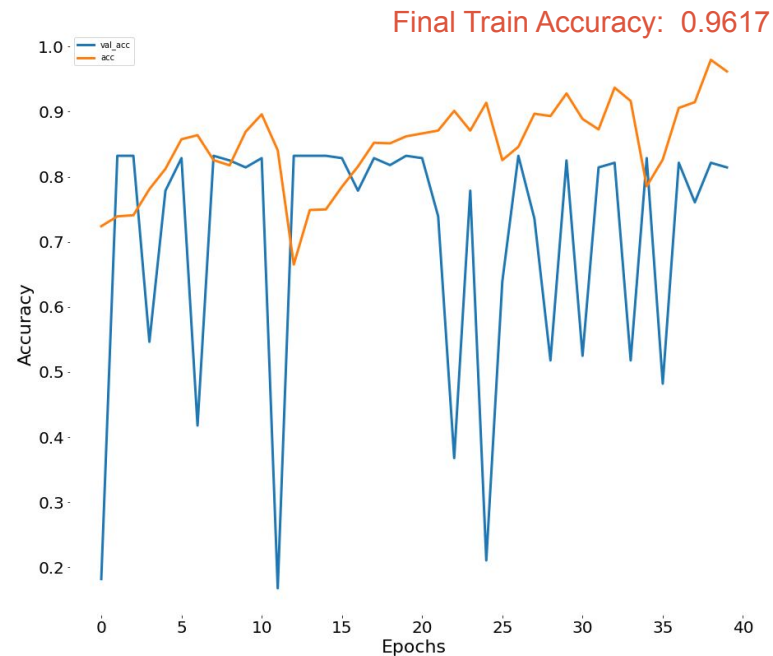


Final Model: Deep Neural Network

Final Model Loss
Train vs. Validation

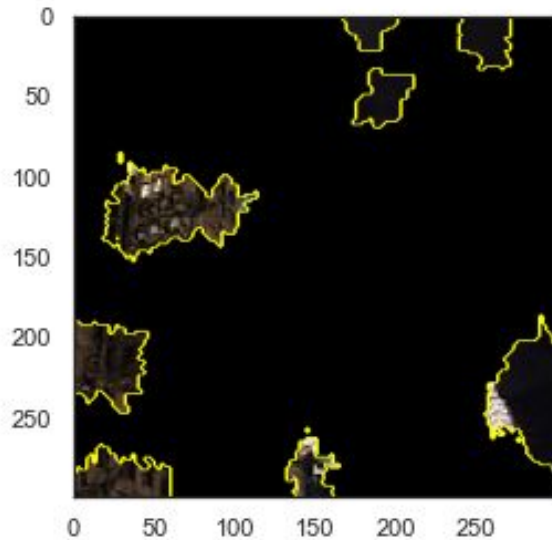


Final Model Accuracy
Train vs. Validation

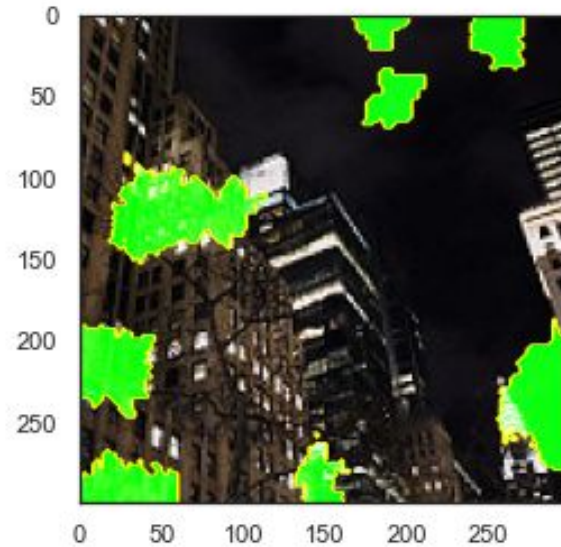


LIME Visualizations: Final Model

Top 5 Superpixels of Building Image



“Pros and Cons”





Deployment: App Mock up

YOUR PHOTOS



SORT PHOTOS

STREET ALBUM



FOREST ALBUM



MOUNTAIN ALBUM



GLACIER ALBUM



BUILDING ALBUM



SEA ALBUM



Next Steps

Continue to improve upon models

Add more data

App Deployment

(Image from pexels)



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The Process

