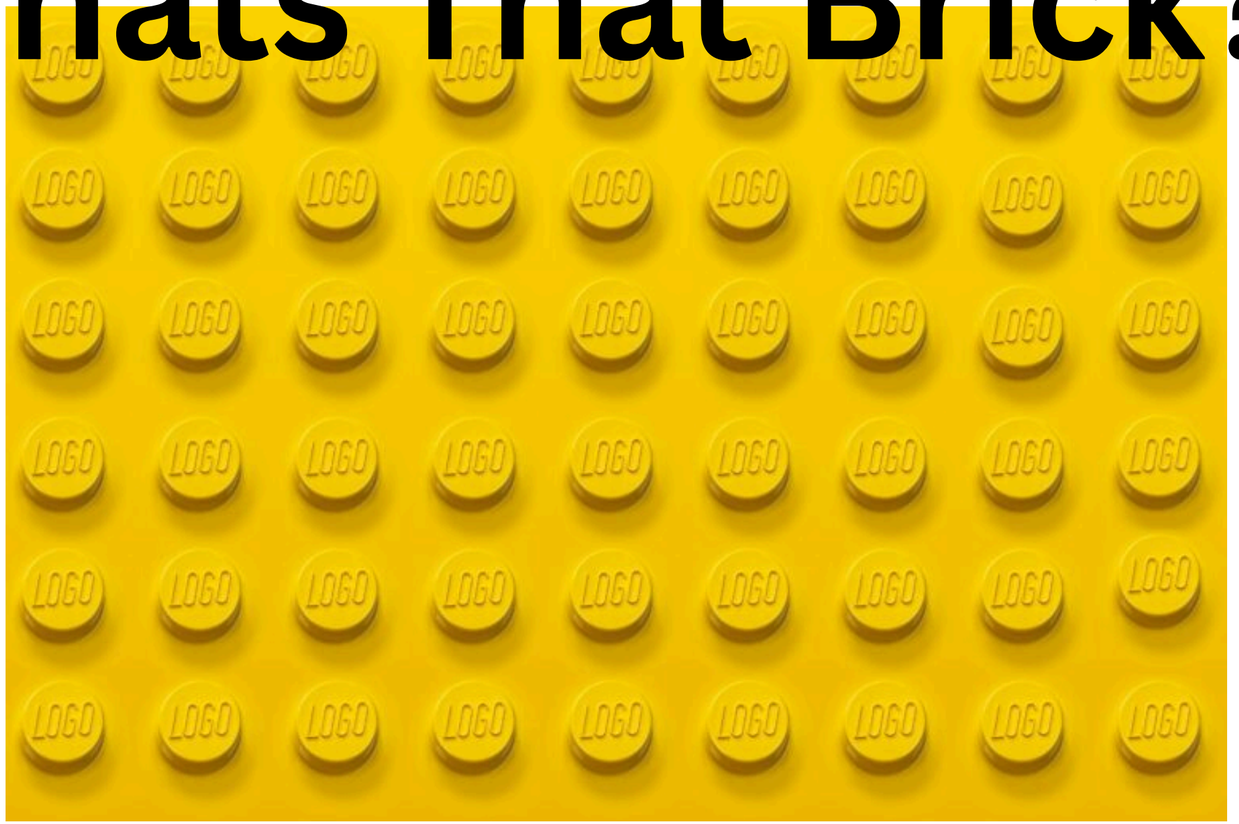
Whats That Brick?



-by Muadz Najihi Bin Abdul Shukor

Why?

cant find the code for specific part

Who?

For diehard LEGO fans who do modelling and those who wants to buy parts seperately

Impact?

saves countless hours lost finding the part

JOOST HAZELZET · UPDATED 6 YEARS AGO

224 Code Download

Images of LEGO Bricks

40,000 images of 50 different LEGO bricks

used images from kaggle

Total training images: 32000

Total validation images: 8000

The LEGO part name (50 different types).

Objectives

1. **Automatically identify LEGO parts from images**
2. **Reduce errors and save time in inventory management or LEGO sorting**
3. **Deploy a web app so users can identify parts**

5. Methodology

Data Collection: Gathered images for 50 LEGO parts.

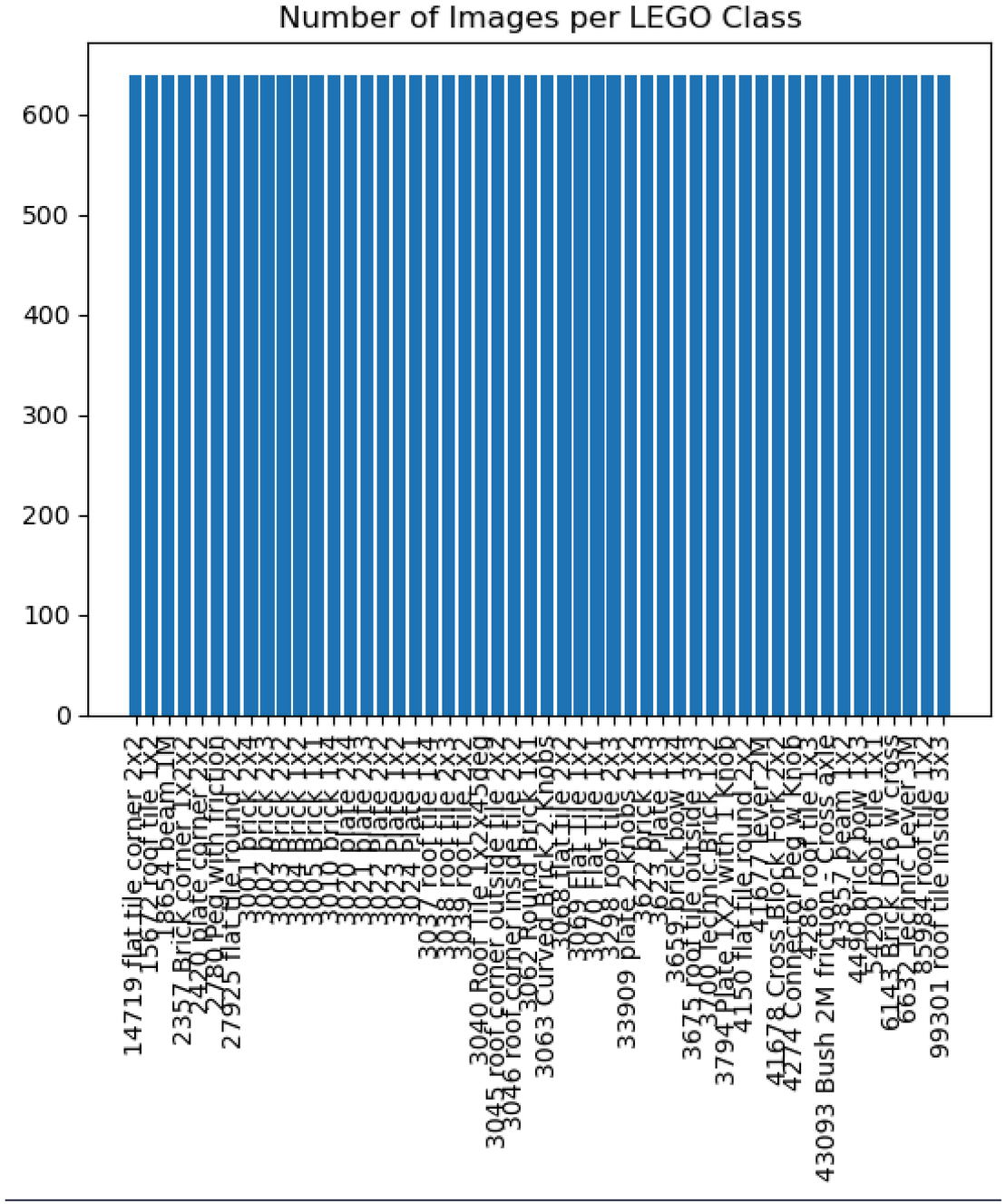
Preprocessing: Resize to 96×96, apply data augmentation like rotation, flip, zoom.

Model Building: CNN with 3 conv layers, dropout, and dense layers.

Training: Training/validation split using flow_from_directory, batch sizes 128/32, 20 epochs, early stopping applied.

Evaluation: Top-1 and top-3 predictions, accuracy & loss curves.

Deployment: Streamlit app for user to upload image and see top-3 predictions.



shows that theres no bias towards one specific part/ class

7. Modeling Approach

Algorithm: CNN (3 conv layers, dropout, dense layers).

Validation: Split into training & validation sets, flow_from_directory ensures same class order.

Feature Engineering: Normalization, data augmentation.

Evaluation metric: Top-1 and top-3 accuracy.

project demo