Sign Language Recognition

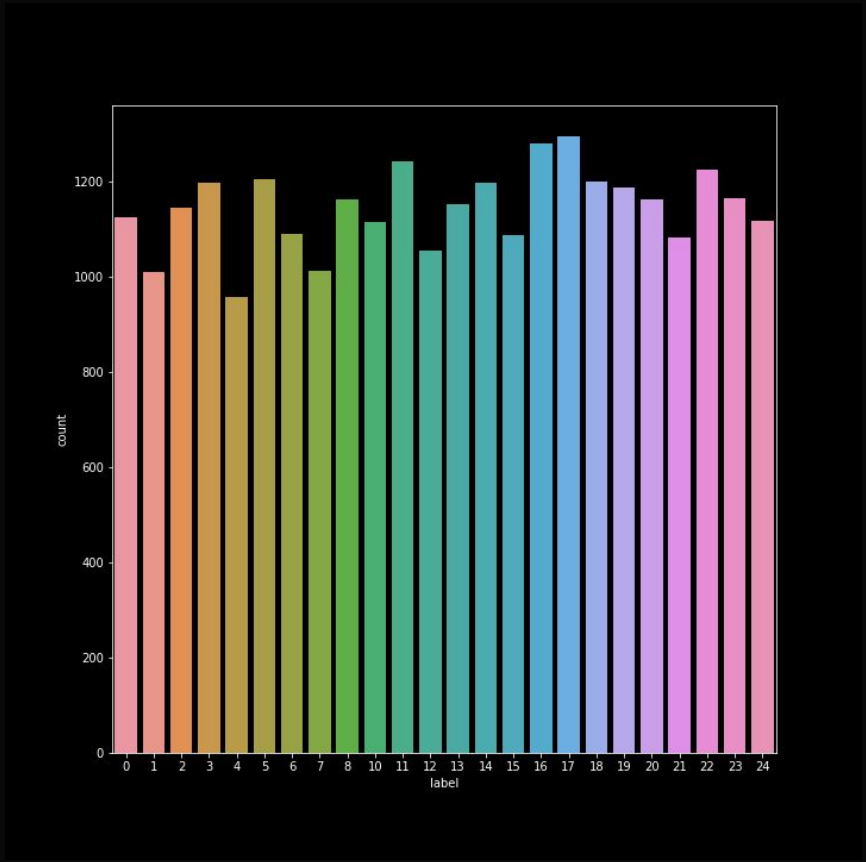
Why we chose this topic?

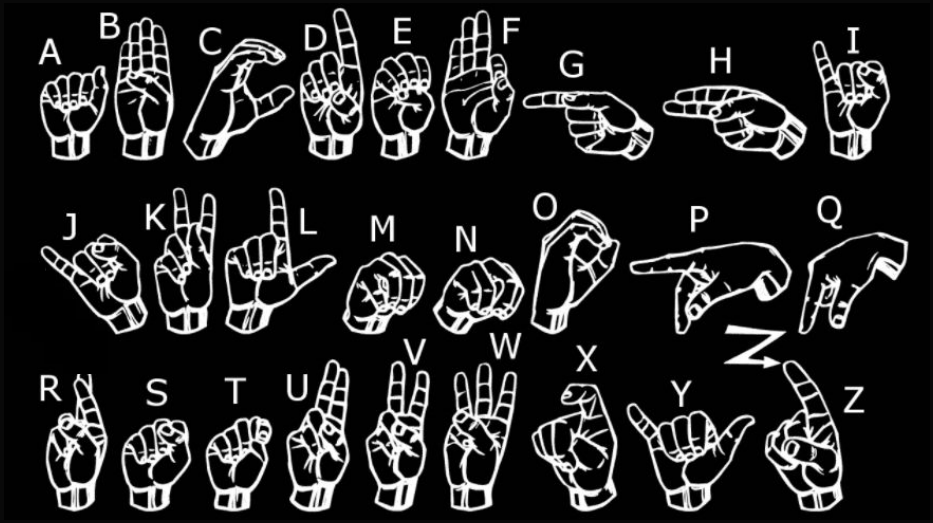
- Speech is the most common technique of communication
- Dumb people are the most impacted
- Sign language is used for conveying their thoughts to others

Data

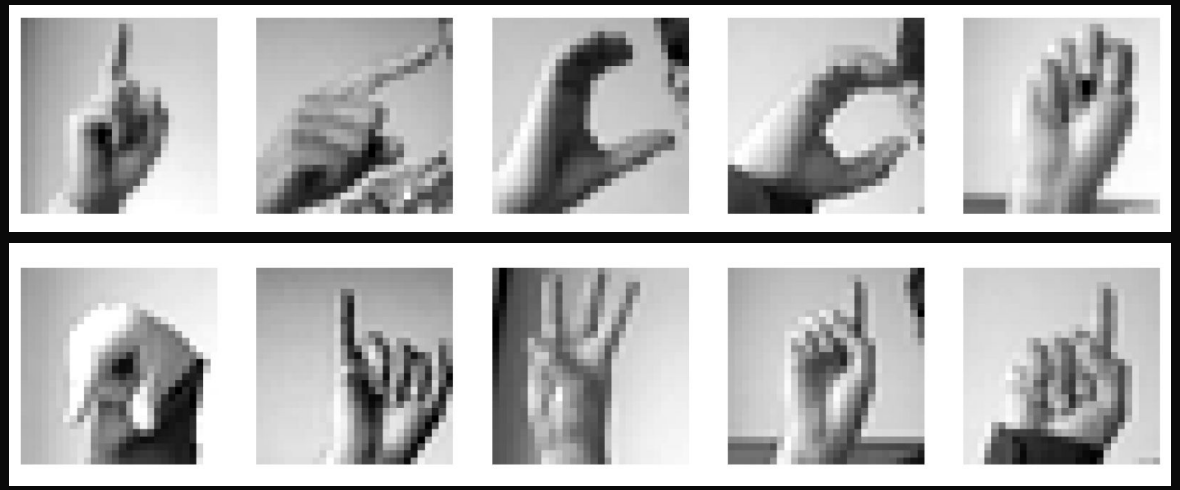
- Training samples: 27455 images
- Testing samples: 7172 images
- Image dimension: 28 x 28 (784 pixels)
- Grayscale images
- Data source: Kaggle

Breaking it down



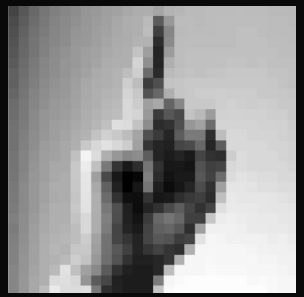


Some Examples



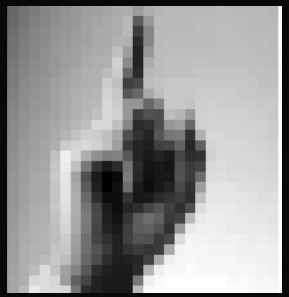
Preprocessing

- Rotation
- Blurring
- Normalization
- Zoom
- Flipping



Original Image

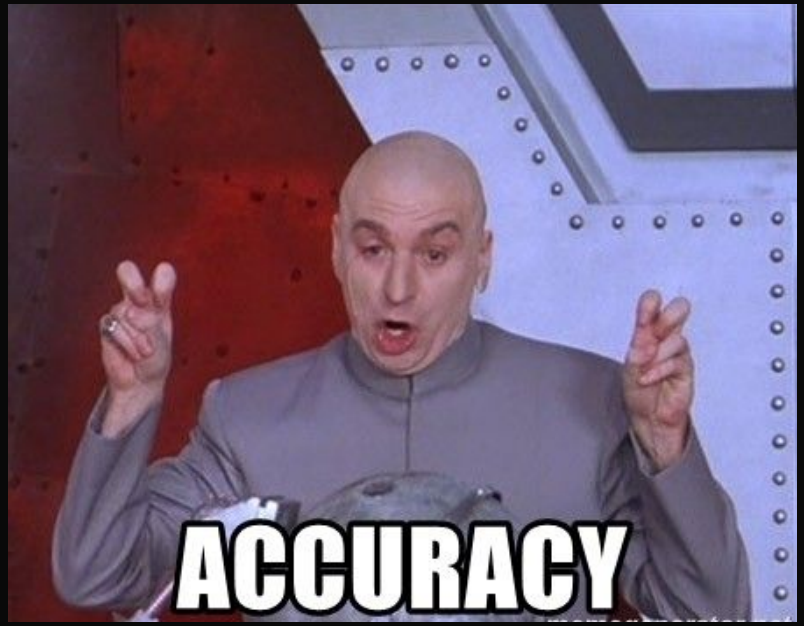
Rotated Image

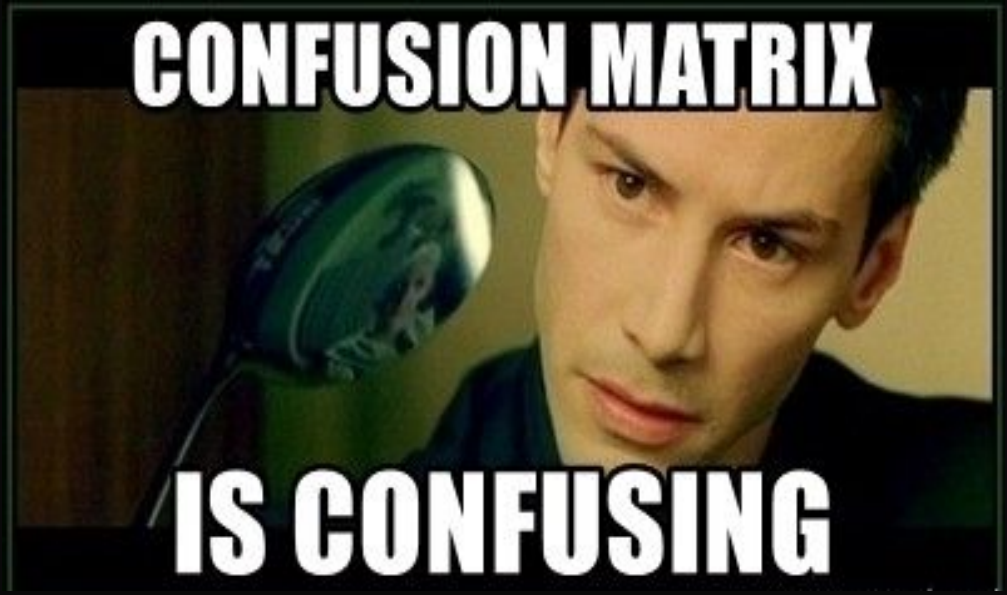


Blurred Image

Validation Scheme

Scoring Metric





Modeling the Data

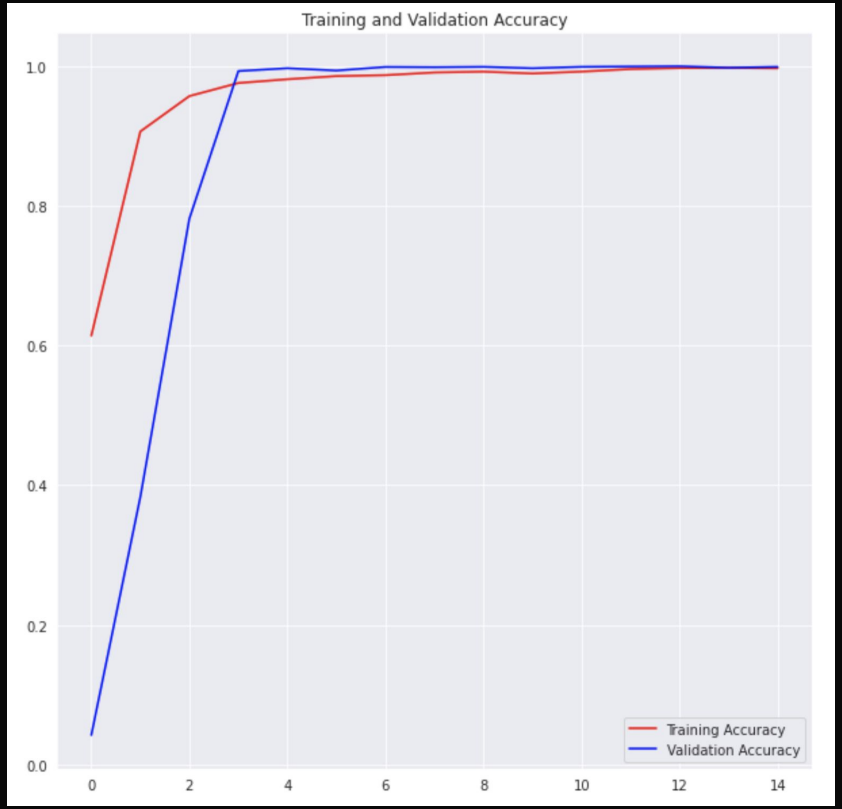
- Decision Tree
- XGBoost
- CatBoost
- ANN
- CNN

Results!

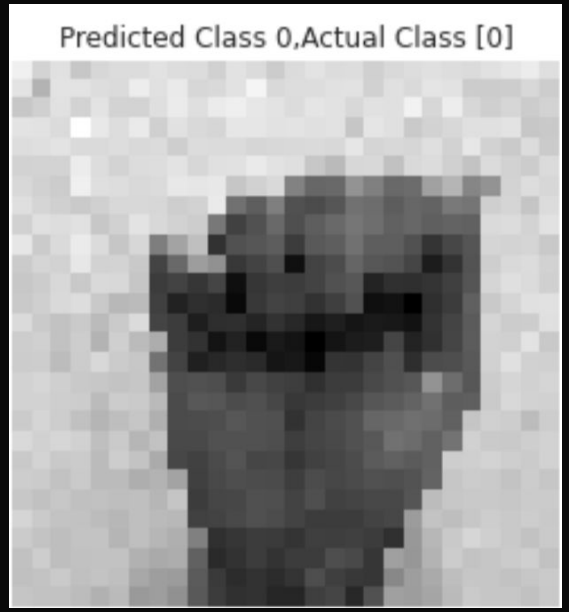
Model	Accuracy (%)	Time
Decision Tree	44.3	150 s
XGBoost	77.1	90 s
CatBoost	81.8	93 s
ANN	66.0	70 s
CNN	98.8	100 s

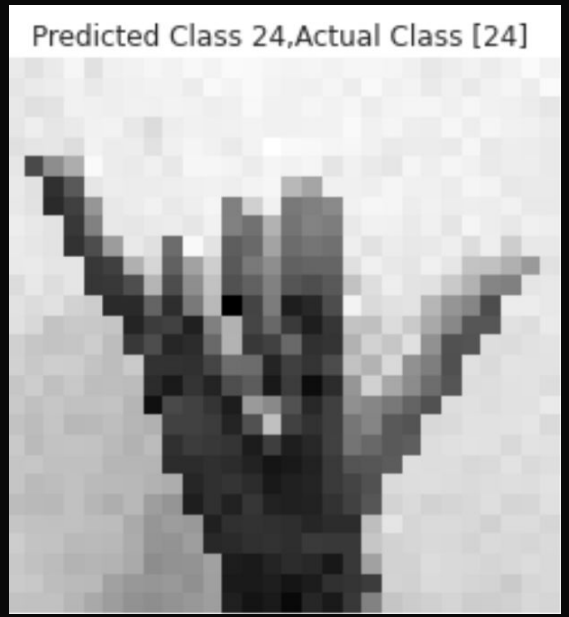
COME ON IN...
WORLD'S
BEST
BOSS
IT'S PERFORMANCE REVIEW TIME!

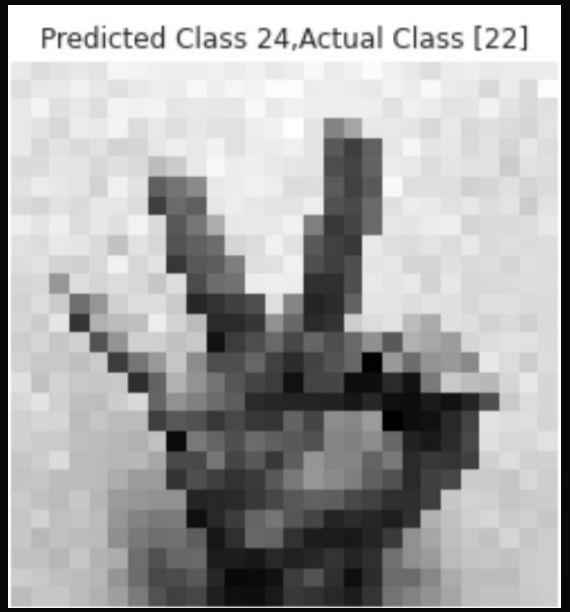
Training and validation accuracy of CNN

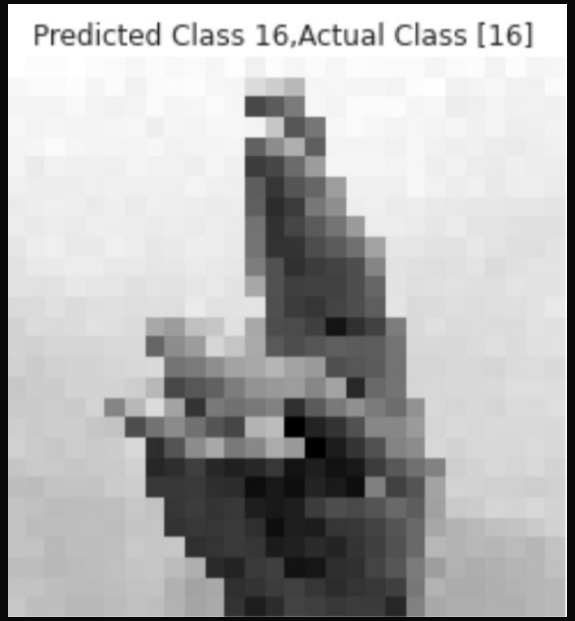


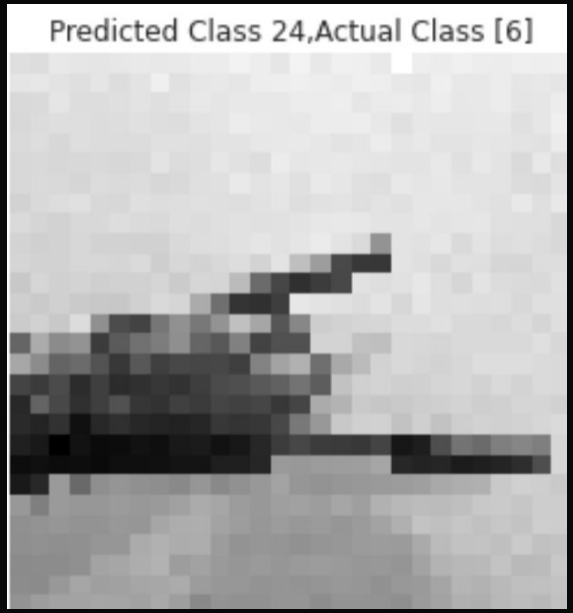
Testing on live data








Predicted Class 16,Actual Class [16]


Predicted Class 24,Actual Class [6]

How can this be further improved?

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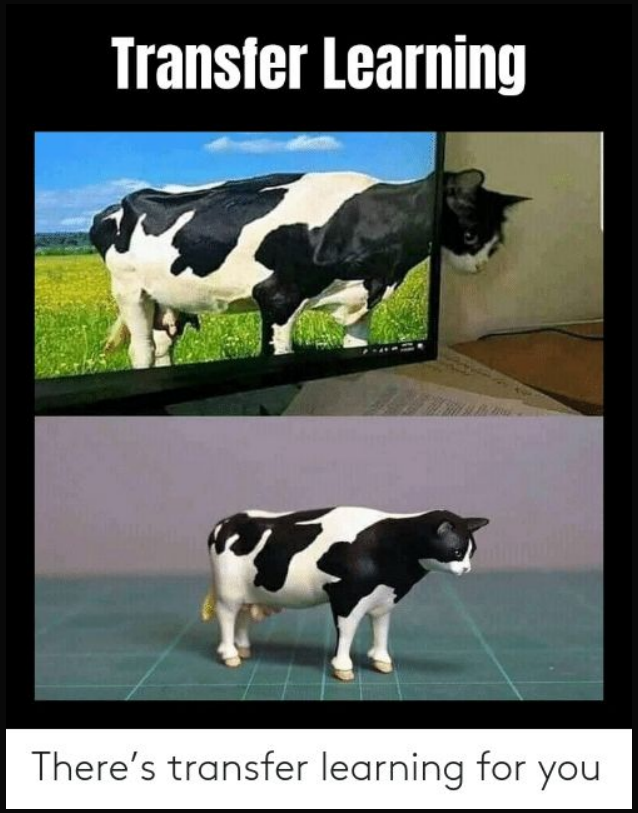

THANK YOU