SignNet

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PIPELINE

Create Dataset

OpenPose

RNN

Label Raw Signs

DATASET

20 videos per sign separated into sequences of still images.
~20,000 images total

OPENPOSE

Output: JSON file with 390 entries for pose, face, right hand, and left hand

RNN DESIGN

LSTM (128) + Dropout + BatchNorm

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TimeDistributed Dense (11)

Softmax

RESULTS

After training the model for 20 epochs:
• Train Categorical Accuracy: 91%
• Test Categorical Accuracy: 90%
• Loss Function: Categorical Cross Entropy (0.322)

FUTURE

• More signs
• User interface
• “Alexa” for sign language

REFERENCES

• OpenPose
• ASL-LEX