SKETCH RNN

Stroke Data (5D, length ≈ 200)

$[\Delta x, \Delta y, p1, p2, p3]_{t=0}$,$[\Delta x, \Delta y, p1, p2, p3]_{t=1}$ ..... $[\Delta x, \Delta y, p1, p2, p3]_{t=2999}$

Preprocessing

Filter (keep only recognized drawings.)

↓

Scale & Normalize

↓

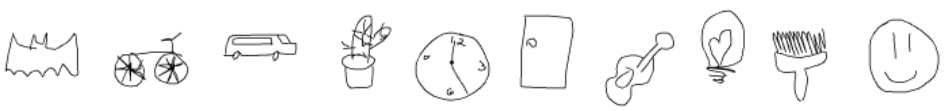
Rendering strokes on 256 x 256 white canvas

↓

Resize to 64 x64 Grayscale

↓

Saves image as PNG per class



Conv2D
128→256
(3x3, pad=1)

BatchNorm
ReLU
MaxPool(2x2) →
Feature map:
4x4

Conv2D
64→128
(3x3, pad=1)

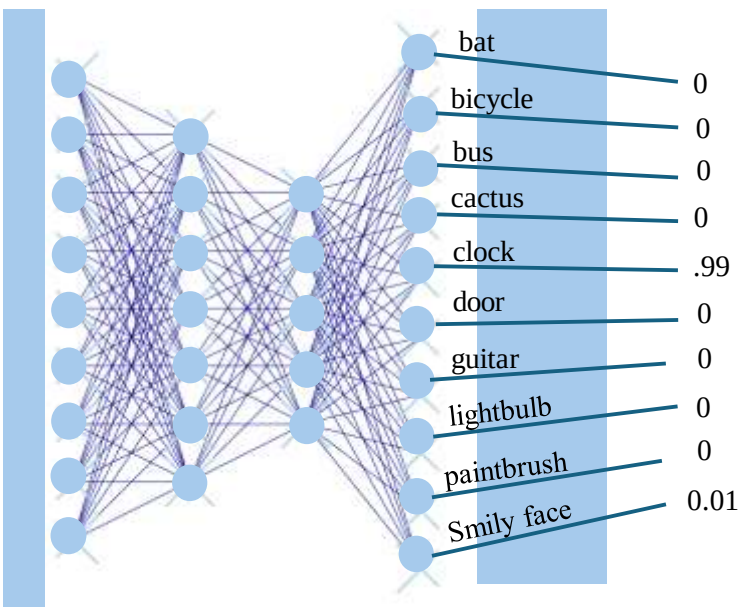
BatchNorm
ReLU
MaxPool(2x2) →
Feature map:
8x8

Conv2D
32→64
(3x3, pad=1)

BatchNorm
ReLU
MaxPool(2x2) →
Feature map:
16x16

Conv2D
1→32
(3x3, pad=1)

BatchNorm
ReLU
MaxPool(2x2) →
Feature map:
32x32



Clock

Flatten
256x4x4 → 4096

Softmax → class probabilities
P = [p1, p2 …. p10]

Fully Connected Layer

Threshold > 0.60
Class will be Recognized

Threshold < 0.60
Class will be not be Recognized

y = argmax (p_i)

Threshold