Deep Learning FSS22
Assignment 2: CNNs and RNNs

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Contents

1 Convolutional Neural Networks

1.1 a)

(i) 3x3 convolutional layer with bias, 1 input channel, 32 output channels, stride 1, padding 1 on each side

Input: 28x28x1
Output: 28x28x32
No. of Parameters: 3x3x32=288 (+bias?)

(ii) Logistic activation function

Input: 28x28x32
Output: 28x28x32
No. of Parameters: IDK (28x28x32?)

(iii) 2x2 max-pooling layer with stride 2

Input: 28x28x32
Output: 14x14x32
No. of Parameters: none

(iv) Linear layer with 10 hidden units

Input: 14x14x32
Output: 10
No. of Parameters: 62720

(v) Log-softmax function

Input: 10
Output: 10
No. of Parameters: 10

Interpretation: log-probabilities for the 10 different classes of clothing.

1.2 b)

Cf. Code.

1.3 c)

Cf. code.

1.4 d)

Cf. Code.

1.5 e)

2 Recurrent Neural Networks and Pretraining

2.1 a)

Cf. Code.

2.2 b)

2.3 c)

2.4 d)

2.5 e)

References