Parameters calculation:

GRU network –

Embedding layer – 20000 \* 128 = 2560000

GRU layer # 1 – 3×(n2+nm+n)3×(n2+nm+n)

Where m is the input dimension and n is the output dimension. This is due to the fact that there are three sets of operations requiring weight matrices of these sizes.

= 3 \* (128^2 + 128 \* 128 + 128) = 98688

GRU layer # 2 = 3 \* (1^2 + 1 \* 128 + 1) = 390

Dense layer with 1 neuron – 1 weight + bias = 2

Total:

2560000 + 98688 + 390 + 2 = 2659080

Simple RNN –

Embedding layer – 20000 \* 128 = 2560000

SimpleRNN layer - (num\_features + num\_units)\* num\_units + num\_units

num\_units = equals the number of units in the RNN

num\_features = equals the number features of your input

(128 + 128) \* 128 + 128 = 32896

Dense layer – 1 neuron connected to 128 from previous layer + 1 for bias = 129

Total:

2560000 + 32896 + 129 = 2593025