

Práctica TEXTO

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Introducción

Para esta práctica he adaptado la práctica "Machine_Translation" para aceptar la traducción español-inglés.

Además, he comparado tres tipos de RNN distintas: Una RNN simple, un GRU y un LSTM, para ver cuál funcionaba mejor.

Para el modelo he utilizado el mismo esquema Seq2Seq del ejemplo, sustituyendo las dos redes LSTM por GRU o SimpleRNN en el codificador y decodificador.

Comparación

En cuanto a complejidad, LSTM es el algoritmo más costoso, seguido por GRU y finalmente SimpleRNN.

Los resultados también siguen la misma jerarquía, con LSTM ofreciendo la mejor calidad de traducción, seguida por GRU y finalmente SimpleRNN.

Es difícil de interpretar cuál tiene una mejor traducción, pero se puede ver que LSTM traduce mejor las frases largas, y que GRU las traduce un poco peor, y finalmente SimpleRNN, con apenas memoria, le cuesta más:

	actual	predicted
0	they are very cheerful	theyre very
1	i know tom	i know tom
2	you may refuse	you can stand up
3	thats private	thats another
4	tom leaped from his seat	tom is his
5	have you ever sold a car	did you get of a car
6	how many kids do you have	how many do you have
7	i will not let you do it	i wont do to it
8	isnt it beautiful	is it beautiful
9	my parrot died yesterday	my mother was surprised
10	i ate an apple	i made an
11	toms glad	tom is happy
12	watch my back	my
13	tom is hiding	tom is hiding
14	put it over there	put there

frases LSTM

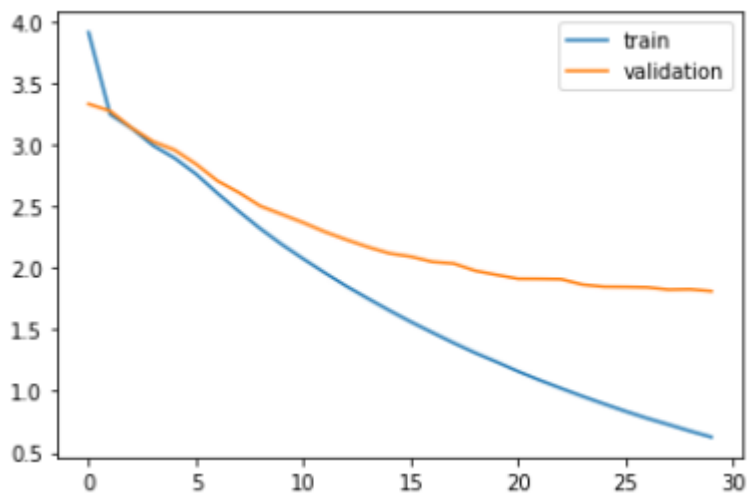
	actual	predicted
0	they are very cheerful	theyre very sweet
1	i know tom	i know tom
2	you may refuse	you may smoke me
3	thats private	thats a nonsense
4	tom leaped from his seat	tom died in his seat
5	have you ever sold a car	have you ever a car
6	how many kids do you have	how many do you have
7	i will not let you do it	i wont let you
8	isnt it beautiful	isnt it beautiful
9	my parrot died yesterday	my father was here
10	i ate an apple	i ate an a apple
11	toms glad	toms happy
12	watch my back	leave my seat
13	tom is hiding	tom is
14	put it over there	it rain there

frases GRU

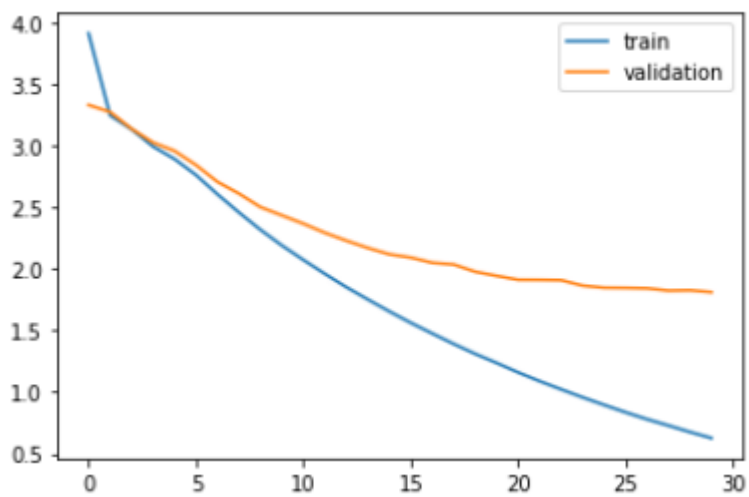
	actual	predicted
0	they are very cheerful	theyre are very
1	i know tom	i know tom
2	you may refuse	you can stand
3	thats private	thats new
4	tom leaped from his seat	tom out down his room
5	have you ever sold a car	have you ever a car
6	how many kids do you have	how many kids do you have
7	i will not let you do it	i will let you do you
8	isnt it beautiful	is it beautiful
9	my parrot died yesterday	my mother was by
10	i ate an apple	i ate an apple
11	toms glad	tom is happy
12	watch my back	my back
13	tom is hiding	tom is
14	put it over there	put it there

frases SimpleRNN

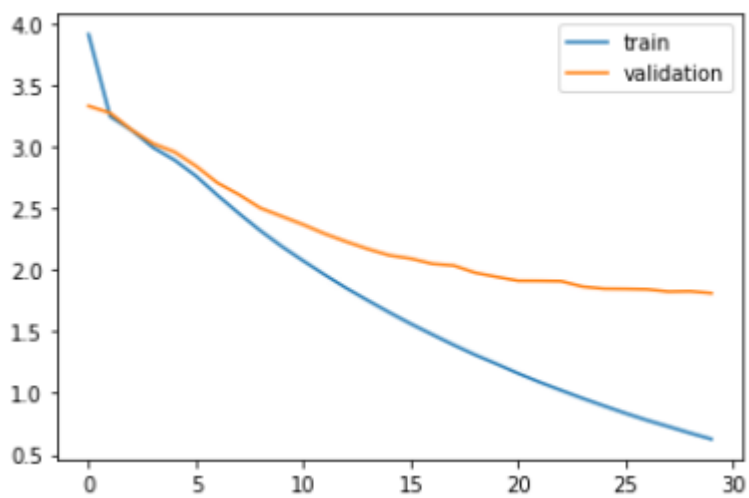
La función de pérdida sin embargo, progresa de manera muy similar en el tiempo:



Loss LSTM



Loss GRU



Loss SimpleRNN

Código