APTOS 2019 Blindness Detection

Detect Diabetic Retinopathy to Stop Blindness Before it's too Late

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Abstract

Hei I'm a cool abstract.

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1 Motivation

Why kaggle: real problem.

2 Background

Few lines about the problem and medical stuff.

3 Preprocessing

3.1 data augmentation

3.2 crop

3.3 K-fold

3.4 VGG features

4 Models

4.1 baseline

4.2 MLP

4.3 Multihead, Attention, ResNet..

5 Evaluation and Experimental Result

5.1 Evaluation

How did we evaluate, 70/30 85/15. multiple tests to reduce variance ecc..

5.2 Hyperparameters

5.3 Experiments

5.4 Results

Experiments on specification `S1`

Algo	C	Avg Trace Falsification	Success Rate	Robustness			Time (sec)	
				min	avg	std dev	tot	trac
URS	- - -	**40.0**	**2/10**	**-4.07960**	**4.91882**	**5.514537**	**178.014**	**2.01**
MCTS+RS	0.500	- - -	0/10	5.30248	8.34921	**2.400517**	**559.916**	**5.59**
MCTS+HC	0.500	94.0	**1/10**	**-1.93401**	**5.07959**	4.386757	1034.225	10.40
MCTS+SA	0.500	**24.0**	**1/10**	-0.68394	7.71311	4.152730	891.788	9.78
MCTS+RS	0.250	**62.0**	4/10	-4.52952	2.80386	4.995340	**355.163**	**4.19**
MCTS+HC	0.250	74.4	5/10	-3.63763	2.02058	4.289398	676.262	7.77
MCTS+SA	0.250	74.6	**7/10**	**-10.29078**	**-2.38069**	**3.744391**	597.866	7.29
MCTS+RS	0.125	**46.5**	**8/10**	-6.27352	**-1.28520**	**3.320830**	**170.078**	**2.99**
MCTS+HC	0.125	68.1	**8/10**	-4.61933	-0.07330	4.719893	380.664	5.12
MCTS+SA	0.125	48.5	**8/10**	**-6.43350**	-0.69363	5.875865	304.758	5.22
MCTS+RS	0.000	65.5	2/10	**-4.20689**	6.83323	7.070816	**325.054**	**3.51**
MCTS+HC	0.000	**41.0**	**4/10**	-2.64884	**1.95654**	**3.712926**	430.037	5.58
MCTS+SA	0.000	78.0	2/10	-1.51834	4.81908	6.613282	558.383	5.83

Table 1: Comparison between MCTS and URS, given a budget of 100 simulations and varying the parameter C in order to balance exploration and exploitation in the search. The input signals have been split into 2 and 3 region.

5.4.1 Analysis of the Results

comments on the results. comparing models and vs kaggle leaderboard.

6 Conclusion and Future Work

References