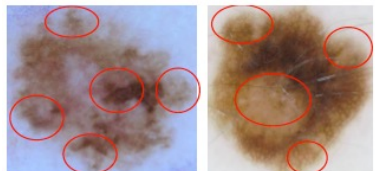


Two challenges about the relationship

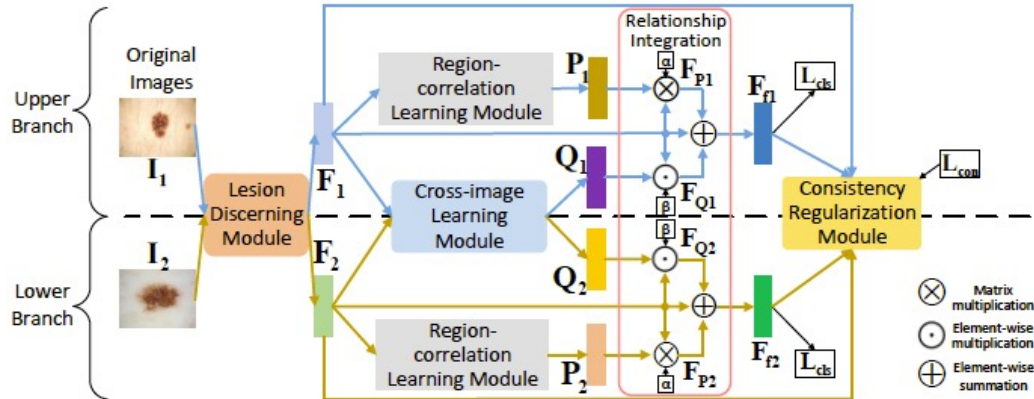


Region-level relationship challenge



Image-level relationship challenge

Our Method



ISIC 2016

ISIC 2017

ISIC 2019

Method	AP*	ACC	AUC
Our MRCN	0.807	0.898	0.900
CIN [9]	0.740	0.887	0.873
L-CNN [20]	0.724	0.876	0.854
AttnMel-CNN [24]	0.693	-	0.852
DCNN-FV [27]	0.685	0.868	0.852
SDL [28]	0.664	0.858	0.818
CUMED [26]	0.637	0.855	0.804
GTDL [7]	0.619	0.813	0.802
Result2 [7]	0.615	0.844	0.808
USYD [7]	0.580	0.686	0.793
Mufic-IT [7]	0.534	0.760	0.685

Methods	External data	Melanoma Classification					Seborrheic Keratosis					Average AUC*
		AUC*	AP	ACC	SE	SP	AUC*	AP	ACC	SE	SP	
Our MRCN	0	0.947	0.864	0.906	0.796	0.921	0.988	0.917	0.949	0.918	0.946	0.968
CIN [9]	0	0.920	0.814	0.894	0.645	0.948	0.981	0.902	0.943	0.829	0.965	0.951
MBDCNN [23]	1320	0.903	-	0.878	0.727	0.915	0.973	-	0.93	0.844	0.945	0.938
ARL-CNN [30]	1320	0.875	-	0.850	0.658	0.896	0.958	-	0.868	0.878	0.867	0.917
SSAC [22]	1320	0.873	-	0.835	0.556	0.903	0.959	-	0.912	0.889	0.916	0.916
SDL [29]	1320	0.868	0.689	0.872	-	-	0.955	0.818	0.917	-	-	0.912
RENI [11]	1444	0.868	0.710	0.828	0.735	0.851	0.953	0.786	0.803	0.978	0.773	0.911
gpm-LSSSD [5]	900	0.856	0.747	0.823	0.103	0.998	0.963	0.839	0.875	0.178	0.998	0.910
Alea-Jacta-Est [12]	7544	0.874	0.715	0.872	0.547	0.950	0.943	0.790	0.895	0.356	0.990	0.908
EResNet [1]	1600	0.870	0.732	0.858	0.427	0.963	0.921	0.770	0.918	0.589	0.976	0.896

Method	BMCA*	AUC	SE	NPV
Our MRCN	0.635	0.875	0.635	0.950
Jordi.delatorre Team_2	0.609	0.903	0.479	0.937
SabancıUnivTeam	0.602	0.866	0.313	0.918

State-of-the-art
Experimental
Results