Paper Tittle: A robust framework combining image processing and deep learning hybrid model to classify cardiovascular diseases using a limited number of paper-based complex ECG images

The ECG Images dataset of Cardiac and COVID-19 Patients Datasets contains five classes: Myocardial Infarction (MI), History of Myocardial Infarction (HMI), Normal Heartbeat (NHB), Abnormal Heartbeat (AHB), and COVID-19. The dataset is divided into three parts: training, validation, and testing, with a 70:20:10 ratio. The IDs of ECG images including training, validation and test images are given below.

Train

Covid19

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NHB:

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Normal(104), Normal(121), Normal(123), Normal(126), Normal(128), Normal(139), Normal(140), Normal(163), Normal(171), Normal(172), Normal(18), Normal(184), Normal(185), Normal(189), Normal(192), Normal(193), Normal(201), Normal(213), Normal(227), Normal(242), Normal(246), Normal(249), Normal(276), Normal(282), Normal(292), Normal(298), Normal(301), Normal(304), Normal(309), Normal(313), Normal(324), Normal(342), Normal(352), Normal(355), Normal(366), Normal(37), Normal(409), Normal(412), Normal(416), Normal(426), Normal(432), Normal(432), Normal(435), Normal(440), Normal(448), Normal(45), Normal(486), Normal(489), Normal(517), Normal(522), Normal(565), Normal(594), Normal(601), Normal(608), Normal(616), Normal(631), Normal(642), Normal(643), Normal(654), Normal(656), Normal(67), Normal(679), Normal(685), Normal(689), Normal(699), Normal(709), Normal(717), Normal(722), Normal(742), Normal(746), Normal(749), Normal(76), Normal(772), Normal(779), Normal(782), Normal(783), Normal(8), Normal(802), Normal(829), Normal(835), Normal(841), Normal(854), Normal(859), Normal(88), Normal(90)
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HMI:

PMI(107), PMI(109), PMI(111), PMI(114), PMI(122), PMI(15), PMI(16), PMI(160), PMI(17), PMI(191), PMI(203), PMI(3), PMI(30), PMI(33), PMI(35), PMI(41), PMI(60), PMI(70), PMI(85), PMI(86), PMI(96)

<u>MI:</u>

MI(12), MI(2), MI(21), MI(22), MI(25), MI(35), MI(38), MI(44), MI(61)

AHB:

 $HB(104),\ HB(119),\ HB(121),\ HB(123),\ HB(126),\ HB(128),\ HB(135),\ HB(156),\ HB(186),\ HB(186),\ HB(195),\ HB(205),\ HB(21),\ HB(22),\ HB(222),\ HB(227),\ HB(230),\ HB(237),\ HB(240),\ HB(253),\ HB(253),\ HB(26),\ HB(277),\ HB(284),\ HB(285),\ HB(387),\ HB(312),\ HB(319),\ HB(312),\ HB(312)$

HB(427), HB(432), HB(435), HB(444), HB(456), HB(462), HB(475), HB(501), HB(520), HB(528), HB(540), HB(542), HB(59), HB(65), HB(72), HB(80), HB(84)