

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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Binder1_Page_239,	COVID(1),	COVID(10),	COVID(12),	COVID(2),
	COVID(3),	COVID(4),	COVID(5),	COVID(8),
	COVID(9)			

NHB:

HMI:

PMI(1), PMI(100), PMI(103), PMI(104), PMI(105), PMI(106), PMI(11), PMI(110), PMI(112), PMI(113), PMI(115), PMI(116), PMI(117), PMI(118), PMI(12), PMI(120), PMI(121), PMI(124), PMI(125), PMI(126), PMI(128), PMI(129), PMI(13), PMI(130), PMI(131), PMI(132), PMI(133), PMI(134), PMI(135), PMI(136), PMI(137), PMI(14), PMI(141), PMI(142), PMI(145), PMI(146), PMI(147), PMI(150), PMI(151), PMI(152), PMI(153), PMI(154), PMI(155), PMI(156), PMI(157), PMI(158), PMI(161), PMI(162), PMI(163), PMI(164), PMI(165), PMI(167), PMI(168), PMI(170), PMI(171), PMI(172), PMI(173), PMI(174), PMI(175), PMI(176), PMI(177), PMI(178), PMI(179), PMI(18), PMI(180), PMI(182), PMI(183), PMI(184), PMI(185), PMI(186), PMI(187), PMI(188), PMI(19), PMI(190), PMI(192), PMI(194), PMI(196), PMI(197), PMI(198), PMI(199), PMI(20), PMI(200), PMI(201), PMI(21), PMI(22), PMI(23), PMI(24), PMI(26), PMI(27), PMI(29), PMI(32), PMI(34), PMI(36), PMI(37), PMI(39), PMI(4), PMI(40), PMI(42), PMI(43), PMI(44), PMI(47), PMI(48), PMI(49), PMI(5), PMI(52), PMI(53), PMI(54), PMI(55), PMI(56), PMI(57), PMI(58), PMI(59), PMI(6), PMI(61), PMI(62), PMI(64), PMI(65), PMI(66), PMI(68), PMI(69), PMI(7), PMI(71), PMI(72), PMI(73), PMI(74), PMI(75), PMI(76), PMI(78), PMI(79), PMI(8), PMI(82), PMI(83), PMI(88), PMI(89), PMI(9), PMI(91), PMI(92), PMI(93), PMI(94), PMI(95), PMI(98), PMI(99)

MI:

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AHB:

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Val

Covid19:

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NHB:

Normal(1), Normal(101), Normal(105), Normal(109), Normal(116), Normal(118), Normal(142), Normal(150), Normal(152), Normal(153), Normal(158), Normal(16), Normal(161), Normal(162), Normal(164), Normal(165), Normal(178), Normal(183), Normal(186), Normal(197), Normal(20), Normal(204), Normal(21), Normal(214), Normal(217), Normal(220), Normal(226), Normal(230), Normal(24), Normal(244), Normal(248), Normal(25), Normal(251), Normal(257), Normal(263), Normal(274), Normal(284), Normal(294), Normal(295), Normal(297), Normal(300), Normal(306), Normal(31), Normal(310), Normal(318), Normal(32), Normal(320), Normal(322), Normal(326), Normal(327), Normal(330), Normal(341), Normal(343), Normal(345), Normal(346), Normal(348), Normal(356), Normal(374), Normal(382), Normal(387), Normal(39), Normal(390), Normal(398), Normal(399), Normal(403), Normal(410), Normal(433), Normal(443), Normal(449), Normal(450), Normal(454), Normal(464), Normal(467), Normal(469), Normal(474), Normal(49), Normal(494), Normal(497), Normal(50), Normal(502), Normal(515), Normal(521), Normal(525), Normal(530), Normal(535), Normal(537), Normal(547), Normal(55), Normal(554), Normal(56), Normal(560), Normal(567), Normal(569), Normal(573), Normal(576), Normal(586), Normal(587), Normal(589), Normal(590), Normal(591), Normal(596), Normal(597), Normal(605), Normal(609), Normal(61), Normal(612), Normal(621), Normal(625), Normal(630), Normal(637), Normal(638), Normal(641), Normal(647), Normal(649), Normal(651), Normal(659), Normal(660), Normal(661), Normal(667), Normal(676), Normal(678), Normal(68), Normal(69), Normal(690), Normal(691), Normal(692), Normal(697), Normal(703), Normal(705), Normal(707), Normal(715), Normal(723), Normal(726), Normal(729), Normal(730), Normal(733), Normal(737), Normal(738), Normal(74), Normal(750), Normal(754), Normal(759), Normal(761), Normal(768), Normal(769), Normal(771), Normal(773), Normal(774), Normal(778), Normal(79), Normal(794), Normal(80), Normal(800), Normal(813), Normal(816), Normal(818), Normal(820), Normal(828), Normal(836), Normal(837), Normal(838), Normal(839), Normal(844), Normal(847), Normal(85), Normal(850), Normal(858), Normal(92), Normal(94), Normal(98), Normal(99)

HMI:

PMI(10), PMI(101), PMI(102), PMI(108), PMI(119), PMI(123), PMI(127), PMI(138), PMI(139), PMI(140), PMI(143), PMI(144), PMI(148), PMI(149), PMI(159), PMI(166), PMI(169), PMI(181), PMI(189), PMI(193), PMI(195), PMI(2), PMI(202), PMI(25), PMI(28), PMI(31), PMI(38), PMI(45), PMI(46), PMI(50), PMI(51), PMI(63), PMI(67), PMI(77), PMI(80), PMI(81), PMI(84), PMI(87), PMI(90), PMI(97)

MI:

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AHB:

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Test

Covid19:

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NHB:

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Normal(342), Normal(352), Normal(355), Normal(366), Normal(37), Normal(409), Normal(412), Normal(416),
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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)

MI:

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

AHB:

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