Table S1: Comparison of the proposed models with the state-of-the-art

	Arousal (%)	SI	Emotions Recognized	Methodology	Modalities	Title	#
4.50	63.10	Υ	LA, HA, LV, HV	Regularized Deep Fusion of Kernel Machines (RDFKMs)	EEG, EMG, EDA, RESP	Zhang et al., 2021 [38]	1
2.18	73.08	Υ	LA, HA, LV, HV	Random forest	RESP, PPG, FTT	Ayata et al., 2020 [19]	2
6.90	60.00	Υ	LA, HA, LV, HV	SVM, QDA, Random Forest, Decision Tree, Gaussian Naive Bayes	ECG, EDA, RESP, BVP	Bota et al., 2020 [10]	3
3.80*	53.80*	Υ	Angry, Disgust, Sad, Happy, Afraid, Neutral, Surprised	CNN	Face, EEG, GSR	Cimtay et al., 2020 [12]	4
2.92*	82.92*	Ν	Relax, Excitement, Fear, Depression	CNN	GSR, RESP, EOG, EEG	H. Huang et al., 2020 [5]	5
3.69	87.32	N	-	MDBN	ECG, SCL, tEMG	Wang et al., 2020 [4]	6
9.53*	89.53*	N	Happy, Relaxed, Disgust, Sad, Neutral	DBN	EDA, PPG, EMG	Hassan et al., 2019 [6]	7
0.30	74.23	N	LV, HV, LA, HA	SVM	EEG, Face	Y. Huang et al., 2019 [39]	8
3.00	79.00	N	Valence, Arousal	HNN	EEG, EOG, EMG	Zhu et al., 2019 [7]	9
0.46	76.56	N	LA, HA, LV, HV	CNN	EEG, GSR	Kwon et al., 2018 [40]	10
6.17	77.19	N	LA, HA, LV, HV	ESAE	EEG, EMG, EOG, EDA, TEMP, BVP, RESP	Yin et al., 2017 [9]	11
	56.00	Υ	LA, HA	Stacking	EEG	Proposed Unimodal-1	12
9.00	-	Υ	LV, HV	Logit Boost	zEMG, EOG	Proposed Multimodal-1	13
	55.50	Υ	LA, HA	LDA	Plethysmogra ph	Proposed Unimodal -2 **	14
0.00	-	Υ	LV, HV	LDA	EOG	Proposed Unimodal -3**	15
8.25	-	Υ	LV, HV	Logistic	EDA	Proposed Unimodal -4 **	16
8.25	-	Υ	LV, HV	Logistic	zEMG	Proposed Unimodal - 5 **	17
9 0 3 0 6	89.53* 74.23 79.00 76.56 77.19 56.00 - 55.50	N N N N Y Y Y Y	Happy, Relaxed, Disgust, Sad, Neutral LV, HV, LA, HA Valence, Arousal LA, HA, LV, HV LA, HA LV, HV LA, HA LV, HV LA, HA	SVM HNN CNN ESAE Stacking Logit Boost LDA LDA LDA Logistic	EEG, EOG, EDA, TEMP, BVP, RESP EEG ZEMG, EOG Plethysmogra ph EOG EDA, PPG, EOG, EMG, EOG, EDA, TEMP, BVP, RESP EEG	2020 [4] Hassan et al., 2019 [6] Y. Huang et al., 2019 [39] Zhu et al., 2019 [7] Kwon et al., 2018 [40] Yin et al., 2017 [9] Proposed Unimodal-1 Proposed Unimodal -2 ** Proposed Unimodal -3 ** Proposed Unimodal -4 ** Proposed	7 8 9 10 11 12 13 14 15

^{*} The experiment reports the average score as the experiment is on discrete emotions.

^{** -} Proposed method with minimum number of signals