

Dataset con le feature della frase

- Valence

LINEAR REGRESSOR MAE: 0.23206861067831516 MSE: 0.1046109991568542 RMSE: 0.3234362366168241 R^2: 0.14913207580493537	RANDOM FOREST REGRESSOR MAE: 0.20246897195819738 MSE: 0.08305877467893116 RMSE: 0.2881991927104085 R^2: 0.32443005260582813	GRADIENT BOOSTING REGRESSOR MAE: 0.19997520705668495 MSE: 0.07865752411190896 RMSE: 0.2804594874699534 R^2: 0.3602282283617966

- Arousal

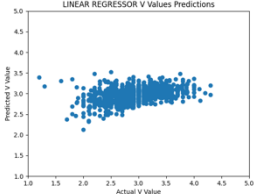
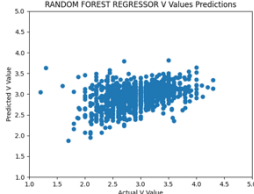
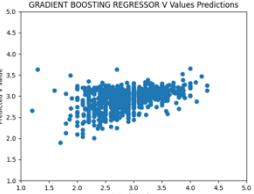
LINEAR REGRESSOR MAE: 0.18961689446946448 MSE: 0.06356948704806066 RMSE: 0.25212990113840256 R^2: 0.07478418045086366	RANDOM FOREST REGRESSOR MAE: 0.16986956859523025 MSE: 0.04903015439903892 RMSE: 0.22142753758066977 R^2: 0.2863954612276298	LINEAR REGRESSOR MAE: 0.1615443504264046 MSE: 0.04533628408885673 RMSE: 0.21292318823664258 R^2: 0.34015753175935515

- Dominance

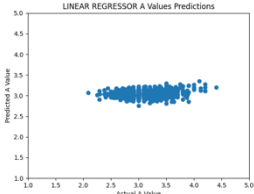
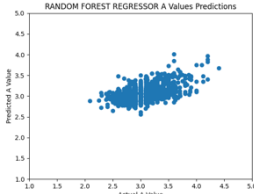
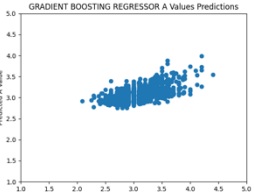
LINEAR REGRESSOR MAE: 0.1392052809295413 MSE: 0.035283994983582534 RMSE: 0.18784034439806196 R^2: 0.19955215553728578	RANDOM FOREST REGRESSOR MAE: 0.1405024677259186 MSE: 0.03535261926690389 RMSE: 0.18802292218478014 R^2: 0.19799535450928607	GRADIENT BOOSTING REGRESSOR MAE: 0.1615443504264046 MSE: 0.04533628408885673 RMSE: 0.21292318823664258 R^2: 0.34015753175935515

1. Rimozione della codifica dell'emozione

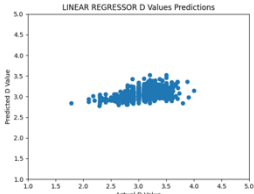
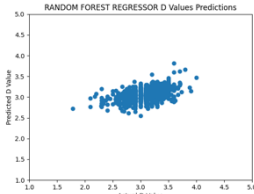
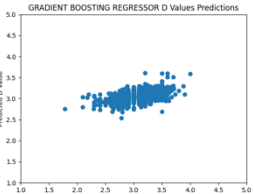
- Valence

LINEAR REGRESSOR MAE: 0.23219366315076886 MSE: 0.10472868549958865 RMSE: 0.3236181167666431 R^2: 0.14817485777857453	RANDOM FOREST REGRESSOR MAE: 0.22459780465314233 MSE: 0.1046281399535311 RMSE: 0.32346273348491184 R^2: 0.14899265878182066	GRADIENT BOOSTING REGRESSOR MAE: 0.21718114039375283 MSE: 0.0963963180863742 RMSE: 0.31047756454593334 R^2: 0.21594731212519624
		

- Arousal

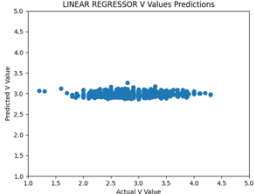
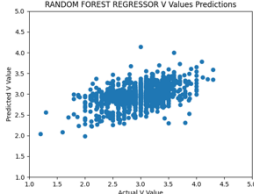
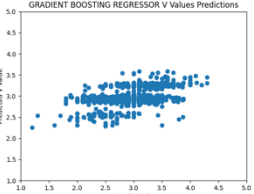
LINEAR REGRESSOR MAE: 0.19010253647419953 MSE: 0.06444257816392095 RMSE: 0.2538554276826102 R^2: 0.06207686205310747	RANDOM FOREST REGRESSOR MAE: 0.168853431728263 MSE: 0.04873880463919568 RMSE: 0.2207686677026332 R^2: 0.2906358825263736	GRADIENT BOOSTING REGRESSOR MAE: 0.1623296718973593 MSE: 0.045536162120299456 RMSE: 0.21339203855884467 R^2: 0.33724842669561084
		

- Dominance

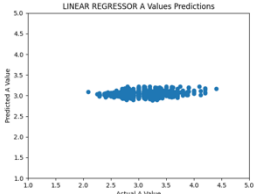
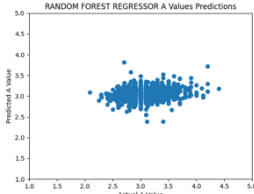
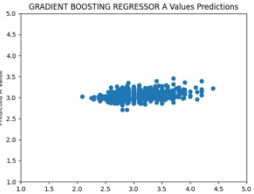
LINEAR REGRESSOR MAE: 0.1394060761682514 MSE: 0.03548819162088925 RMSE: 0.18838309802338757 R^2: 0.19491977878247801	RANDOM FOREST REGRESSOR MAE: 0.14068599718636213 MSE: 0.03529230252517793 RMSE: 0.18786245640142665 R^2: 0.1993636917942796	GRADIENT BOOSTING REGRESSOR MAE: 0.13788236678971505 MSE: 0.0341975950876309 RMSE: 0.184925917836389 R^2: 0.22419807376008405
		

2. Rimozione dei valori delle altre due dimensioni conosciute

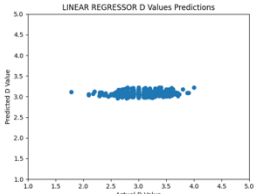
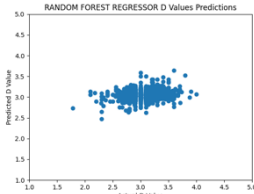
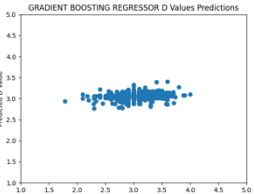
- Valence

LINEAR REGRESSOR	RANDOM FOREST REGRESSOR	GRADIENT BOOSTING REGRESSOR
MAE: 0.2502697213490475 MSE: 0.12245959185378556 RMSE: 0.3499422693156481 R^2: 0.003958096584356308	MAE: 0.2341475892964315 MSE: 0.10161915152931486 RMSE: 0.3187758944021595 R^2: 0.17346667924883674	MAE: 0.22820336721018775 MSE: 0.09772688551175122 RMSE: 0.3126129963897074 R^2: 0.20512495929081986
		

- Arousal

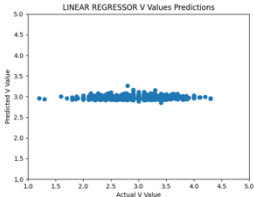
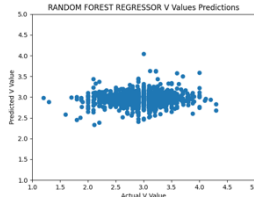
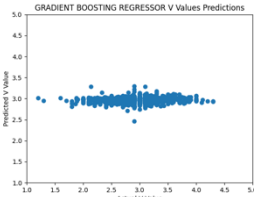
LINEAR REGRESSOR	RANDOM FOREST REGRESSOR	GRADIENT BOOSTING REGRESSOR
MAE: 0.19422001174362694 MSE: 0.06648531183375872 RMSE: 0.2578474584589864 R^2: 0.032346096646259315	MAE: 0.19820008771798728 MSE: 0.06907694580589754 RMSE: 0.2628249337599033 R^2: -0.005373583987485109	MAE: 0.1894097521903308 MSE: 0.06319267631192824 RMSE: 0.2513815353440428 R^2: 0.08026843508677273
		

- Dominance

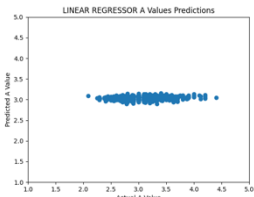
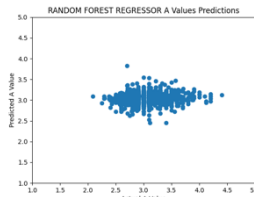
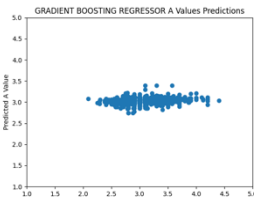
LINEAR REGRESSOR	RANDOM FOREST REGRESSOR	GRADIENT BOOSTING REGRESSOR
MAE: 0.1547017014360949 MSE: 0.043131253659841585 RMSE: 0.2076806530706257 R^2: 0.021530327360641976	MAE: 0.1590455101340336 MSE: 0.04491493443613853 RMSE: 0.21193143805518455 R^2: -0.01893400875721518	MAE: 0.15237239163619962 MSE: 0.04213831111873696 RMSE: 0.2052761825413191 R^2: 0.044056084919340766
		

3. Rimozione della codifica dell'emozione e dei valori delle altre due dimensioni conosciute

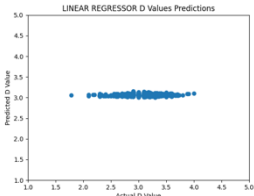
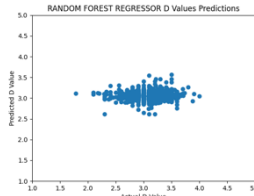
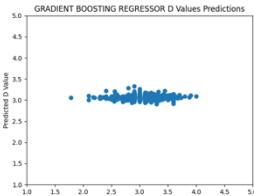
- Valence

LINEAR REGRESSOR MAE: 0.2511435393850646 MSE: 0.12306593732901384 RMSE: 0.3508075502736705 R ² : -0.0009736975865317632	RANDOM FOREST REGRESSOR MAE: 0.2626159989927064 MSE: 0.13007661471663376 RMSE: 0.3606613573931005 R ² : -0.05799600464872934	GRADIENT BOOSTING REGRESSOR MAE: 0.2508229621745022 MSE: 0.12317460356625899 RMSE: 0.350962396228227 R ² : -0.001857549346481413
		

- Arousal

LINEAR REGRESSOR MAE: 0.19510348390282173 MSE: 0.06776584332549843 RMSE: 0.2603187341039796 R ² : 0.01370872754663599	RANDOM FOREST REGRESSOR MAE: 0.20413390914269916 MSE: 0.07348710845417968 RMSE: 0.27108505760034 R ² : -0.06956086059537192	GRADIENT BOOSTING REGRESSOR MAE: 0.19485207187281425 MSE: 0.06740095516177165 RMSE: 0.2596169392812643 R ² : 0.01901945628023427
		

- Dominance

LINEAR REGRESSOR MAE: 0.15627429421245692 MSE: 0.043803501502631605 RMSE: 0.20929286061075186 R ² : 0.006279805503455638	RANDOM FOREST REGRESSOR MAE: 0.16503761061783667 MSE: 0.04892431687803029 RMSE: 0.2211884194030743 R ² : -0.10989030593195936	GRADIENT BOOSTING REGRESSOR MAE: 0.15725853315959898 MSE: 0.044656464709862176 RMSE: 0.2113207626095036 R ² : -0.013070400190412057
		

- Summary dei risultati

Il risultati migliori per i valori di Valence, Arousal si hanno sul dataset ottenuto dalla rimozione della codifica dell'emozione e dei valori delle altre due dimensioni conosciute, con il modello random forest. Per il valore di Dominance si notano valori RMSE simili, per tutte le versioni del dataset, tra i modelli evidenziati in verde (indicanti i risultati migliori in termini di RMSE). Di seguito una tabella ricapitolativa dove vengono mostrati solamente i valori della metrica RMSE per ogni dataset e modello utilizzato:

Dataset con le feature della frase	
Valence	LINEAR REGRESSOR: (RMSE): 0.3234362366168241
	RANDOM FOREST REGRESSOR (RMSE): 0.2881991927104085
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.2804594874699534
Arousal	LINEAR REGRESSOR: (RMSE): 0.25212990113840256
	RANDOM FOREST REGRESSOR (RMSE): 0.22142753758066977
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.21292318823664258
Dominance	LINEAR REGRESSOR: (RMSE): 0.18784034439806196
	RANDOM FOREST REGRESSOR (RMSE): 0.18802292218478014
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.21292318823664258
Dataset con rimozione della codifica dell'emozione	
Valence	LINEAR REGRESSOR: (RMSE): 0.3236181167666431
	RANDOM FOREST REGRESSOR (RMSE): 0.32346273348491184
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.31047756454593334
Arousal	LINEAR REGRESSOR: (RMSE): 0.2538554276826102
	RANDOM FOREST REGRESSOR (RMSE): 0.2207686677026332
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.21339203855884467
Dominance	LINEAR REGRESSOR: (RMSE): 0.18838309802338757
	RANDOM FOREST REGRESSOR (RMSE): 0.18786245640142665
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.184925917836389
Dataset con rimozione dei valori delle altre due dimensioni conosciute	
Valence	LINEAR REGRESSOR: (RMSE): 0.3499422693156481
	RANDOM FOREST REGRESSOR (RMSE): 0.31877758944021595
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.3126129963897074
Arousal	LINEAR REGRESSOR: (RMSE): 0.2578474584589864
	RANDOM FOREST REGRESSOR (RMSE): 0.2628249337599033
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.2513815353440428
Dominance	LINEAR REGRESSOR: (RMSE): 0.2076806530706257
	RANDOM FOREST REGRESSOR (RMSE): 0.21193143805518455
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.2052761825413191
Dataset con rimozione della codifica dell'emozione e dei valori delle altre due dimensioni conosciute	
Valence	LINEAR REGRESSOR: (RMSE): 0.3508075502736705
	RANDOM FOREST REGRESSOR (RMSE): 0.3606613573931005
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.350962396228227
Arousal	LINEAR REGRESSOR: (RMSE): 0.2603187341039796
	RANDOM FOREST REGRESSOR (RMSE): 0.27108505760034
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.2596169392812643
Dominance	LINEAR REGRESSOR: (RMSE): 0.20929286061075186
	RANDOM FOREST REGRESSOR (RMSE): 0.2211884194030743
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.2113207626095036