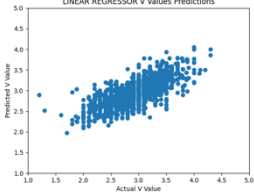
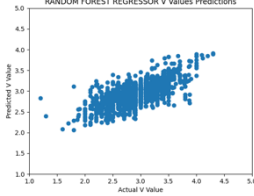
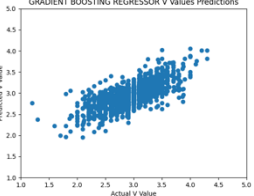
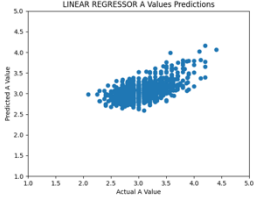
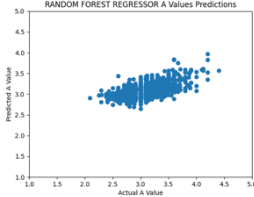
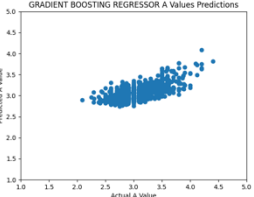


## Dataset con le feature e l'embedding delle frasi

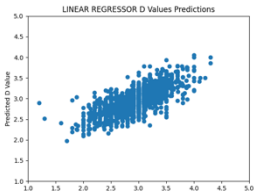
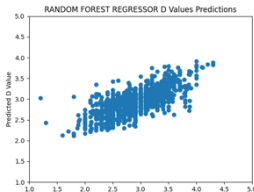
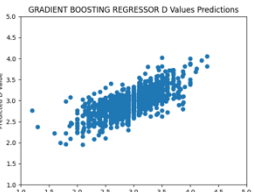
- Valence

<b>LINEAR REGRESSOR</b> MAE: 0.18092736621519268 MSE: 0.059611516263669465 <b>RMSE: 0.2441546974024245</b> R^2: 0.5151415481144896	<b>RANDOM FOREST REGRESSOR</b> MAE: 0.1796016787251147 MSE: 0.06327626307532082 <b>RMSE: 0.2515477351822529</b> R^2: 0.4853338267710121	<b>GRADIENT BOOSTING REGRESSOR</b> MAE: 0.17615152586923183 MSE: 0.05922424284673725 <b>RMSE: 0.24336031485584755</b> R^2: 0.5182914896217584
		

- Arousal

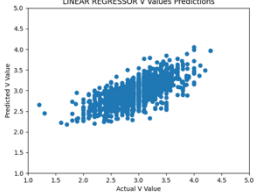
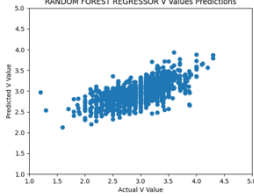
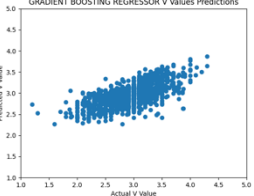
<b>LINEAR REGRESSOR</b> MAE: 0.17054580914805398 MSE: 0.04837929683090907 <b>RMSE: 0.21995294231018842</b> R^2: 0.2958683034082148	<b>RANDOM FOREST REGRESSOR</b> MAE: 0.15961035905408175 MSE: 0.04366539800472087 <b>RMSE: 0.20896267131887664</b> R^2: 0.36447627821295225	<b>GRADIENT BOOSTING REGRESSOR</b> MAE: 0.15578277347216507 MSE: 0.04110526754237497 <b>RMSE: 0.20274434034609937</b> R^2: 0.40173744412547996
		

- Dominance

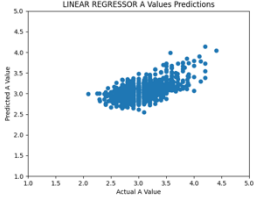
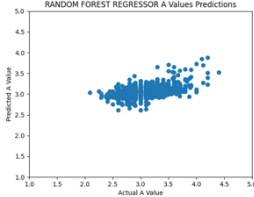
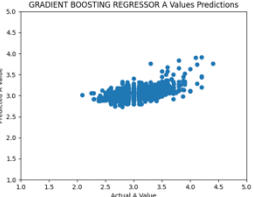
<b>LINEAR REGRESSOR</b> MAE: 0.18092736621519268 MSE: 0.059611516263669465 <b>RMSE: 0.2441546974024245</b> R^2: 0.5151415481144896	<b>RANDOM FOREST REGRESSOR</b> MAE: 0.17840516858183197 MSE: 0.06227005797012746 <b>RMSE: 0.24953969217366495</b> R^2: 0.4935179341408943	<b>GRADIENT BOOSTING REGRESSOR</b> MAE: 0.1760743314194446 MSE: 0.05918373265910722 <b>RMSE: 0.24327706973553267</b> R^2: 0.5186209847946879
		

## 1. Rimozione della codifica dell'emozione

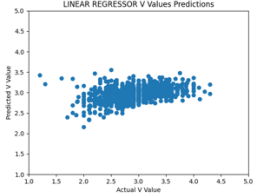
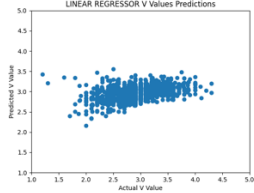
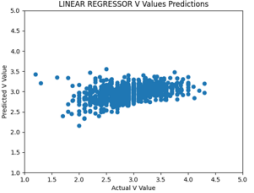
- Valence

<b>LINEAR REGRESSOR</b> MAE: 0.19054337830885074 MSE: 0.06520431522123679 <b>RMSE: 0.25535135641158596</b> R^2: 0.4696517499305495	<b>RANDOM FOREST REGRESSOR</b> MAE: 0.19306104934235208 MSE: 0.07073888615405707 <b>RMSE: 0.2659678291712309</b> R^2: 0.424635557380298	<b>GRADIENT BOOSTING REGRESSOR</b> MAE: 0.19476072891950327 MSE: 0.07089291753204875 <b>RMSE: 0.2662572393983847</b> R^2: 0.42338272201968574
		

- Arousal

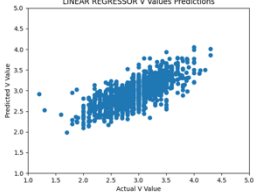
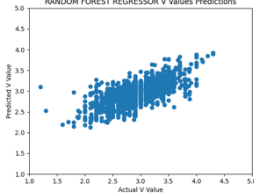
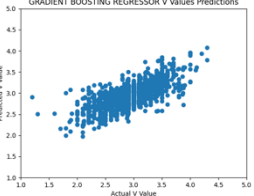
<b>LINEAR REGRESSOR</b> MAE: 0.17301986189189322 MSE: 0.04968597441007831 <b>RMSE: 0.22290350919193333</b> R^2: 0.2768503936619314	<b>RANDOM FOREST REGRESSOR</b> MAE: 0.17717326973575553 MSE: 0.0532117017303261 <b>RMSE: 0.2306766172162365</b> R^2: 0.2255355436672537	<b>GRADIENT BOOSTING REGRESSOR</b> MAE: 0.1753109598734912 MSE: 0.052233858313137656 <b>RMSE: 0.2285472780698507</b> R^2: 0.23976746908676727
		

- Dominance

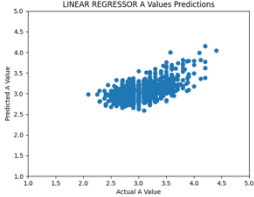
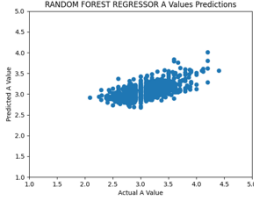
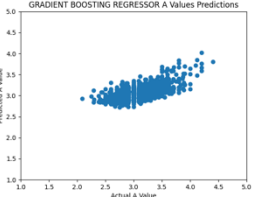
<b>LINEAR REGRESSOR</b> MAE: 0.1475882725177503 MSE: 0.03792020367581782 <b>RMSE: 0.19473110608173985</b> R^2: 0.13974748868378895	<b>RANDOM FOREST REGRESSOR</b> MAE: 0.1468043106406297 MSE: 0.03843097845752214 <b>RMSE: 0.19603820662697907</b> R^2: 0.1281601224229284	<b>GRADIENT BOOSTING REGRESSOR</b> MAE: 0.14481096994370862 MSE: 0.03762087154887744 <b>RMSE: 0.19396100522753906</b> R^2: 0.14653809603704793
		

## 2. Rimozione dei valori delle altre due dimensioni conosciute

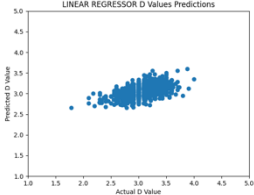

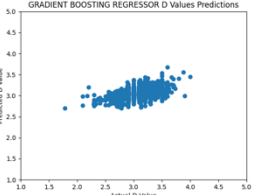
- Valence

<b>LINEAR REGRESSOR</b> MAE: 0.18107477480968923 MSE: 0.05966348125227911 <b>RMSE: 0.244261092383292</b> R^2: 0.514718883745107	<b>RANDOM FOREST REGRESSOR</b> MAE: 0.1814077623303542 MSE: 0.06433466352587444 <b>RMSE: 0.253642787253796</b> R^2: 0.4767251813934894	<b>GRADIENT BOOSTING REGRESSOR</b> MAE: 0.1796015368250854 MSE: 0.062105912657862715 <b>RMSE: 0.24921057894451976</b> R^2: 0.49485303257450775
		

- Arousal

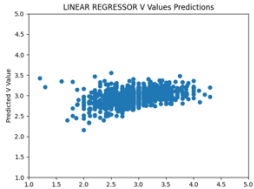
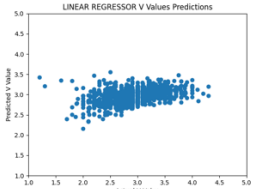
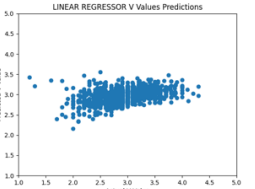
<b>LINEAR REGRESSOR</b> MAE: 0.17058462731542562 MSE: 0.04852987928284495 <b>RMSE: 0.22029498242775514</b> R^2: 0.29367666598675446	<b>RANDOM FOREST REGRESSOR</b> MAE: 0.15902942296779685 MSE: 0.04359673621280118 <b>RMSE: 0.2087983146790251</b> R^2: 0.36547560948071367	<b>GRADIENT BOOSTING REGRESSOR</b> MAE: 0.15642613745280087 MSE: 0.041361787266731675 <b>RMSE: 0.20337597514635714</b> R^2: 0.3980039531375509
		

- Dominance

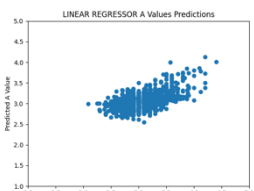
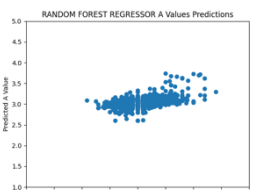
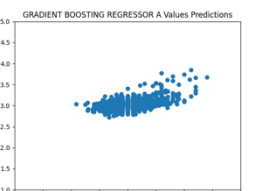
<b>LINEAR REGRESSOR</b> MAE: 0.14011883794582705 MSE: 0.03367194522812788 <b>RMSE: 0.18349916955705245</b> R^2: 0.2361228939845823	<b>RANDOM FOREST REGRESSOR</b> MAE: 0.13408415259847736 MSE: 0.032169731771505033 <b>RMSE: 0.1793592254987321</b> R^2: 0.2702019013032302	<b>GRADIENT BOOSTING REGRESSOR</b> MAE: 0.13406889223732127 MSE: 0.032252780567409385 <b>RMSE: 0.17959059153365853</b> R^2: 0.2683178677719422
		

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

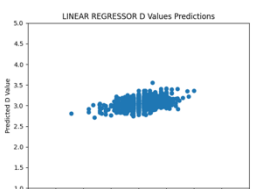
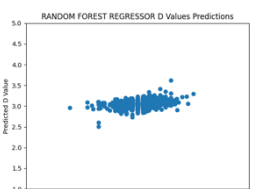
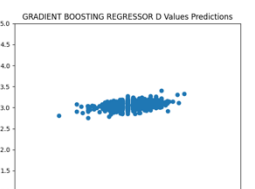
- Valence

<b>LINEAR REGRESSOR</b> MAE: 0.19059514958306642 MSE: 0.06521924494379272 <b>RMSE: 0.2553805884240083</b> R^2: 0.4695303169823666	<b>RANDOM FOREST REGRESSOR</b> MAE: 0.19978069783743993 MSE: 0.0754727923956911 <b>RMSE: 0.27472311951434136</b> R^2: 0.38613168102295903	<b>GRADIENT BOOSTING REGRESSOR</b> MAE: 0.20001460504565846 MSE: 0.07373918986054799 <b>RMSE: 0.2715496084706218</b> R^2: 0.40023217525726806
		

- Arousal

<b>LINEAR REGRESSOR</b> MAE: 0.1730344075851226 MSE: 0.049891822397003634 <b>RMSE: 0.22336477429756832</b> R^2: 0.27385439947085577	<b>RANDOM FOREST REGRESSOR</b> MAE: 0.1784003277197847 MSE: 0.05511876687045594 <b>RMSE: 0.2347738632609174</b> R^2: 0.1977793524740663	<b>GRADIENT BOOSTING REGRESSOR</b> MAE: 0.1775656333815029 MSE: 0.05345321012234127 <b>RMSE: 0.2311995028592001</b> R^2: 0.22202053363299978
		

- Dominance

<b>LINEAR REGRESSOR</b> MAE: 0.1480426011078327 MSE: 0.03800904151317127 <b>RMSE: 0.1949590765088183</b> R^2: 0.1377321257565074	<b>RANDOM FOREST REGRESSOR</b> MAE: 0.14698410116387509 MSE: 0.03854699423353832 <b>RMSE: 0.1963338845781296</b> R^2: 0.12552820452703728	<b>GRADIENT BOOSTING REGRESSOR</b> MAE: 0.14642524594162273 MSE: 0.03805412275462 <b>RMSE: 0.19507465943740618</b> R^2: 0.1367094189297966
		

## - Summary dei risultati

Per la predizione dei valori di Valence e di Arousal, i risultati migliori (tenendo particolare attenzione all'RMSE) sono stati ottenuti dal dataset ottenuto rimuovendo la codifica dell'emozione e i valori delle altre due dimensioni conosciute). Per i valori di Dominance, i risultati migliori sono stati ottenuti utilizzando il modello random forest e sul dataset originario contenente le feature e l'embedding delle frasi. Di seguito una tabella ricapitolativa dove vengono mostrati solamente i valori della metrica RMSE per ogni dataset e modello utilizzato. I modelli con i risultati migliori (in termini di RMSE) sono evidenziati in verde:

Dataset con le feature e l'embedding delle frasi	
Valence	
	LINEAR REGRESSOR: (RMSE): 0.2441546974024245
	RANDOM FOREST REGRESSOR (RMSE): 0.2515477351822529
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.24336031485584755
Arousal	
	LINEAR REGRESSOR: (RMSE): 0.21995294231018842
	RANDOM FOREST REGRESSOR (RMSE): 0.20896267131887664
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.20274434034609937
Dominance	
	LINEAR REGRESSOR: (RMSE): 0.2441546974024245
	RANDOM FOREST REGRESSOR (RMSE): 0.24953969217366495
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.24327706973553267
Dataset con rimozione della codifica dell'emozione	
Valence	
	LINEAR REGRESSOR: (RMSE): 0.25535135641158596
	RANDOM FOREST REGRESSOR (RMSE): 0.2659678291712309
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.2662572393983847
Arousal	
	LINEAR REGRESSOR: (RMSE): 0.22290350919193333
	RANDOM FOREST REGRESSOR (RMSE): 0.2306766172162365
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.2285472780698507
Dominance	
	LINEAR REGRESSOR: (RMSE): 0.19473110608173985
	RANDOM FOREST REGRESSOR (RMSE): 0.19603820662697907
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.19396100522753906
Dataset con rimozione dei valori delle altre due dimensioni conosciute	
Valence	
	LINEAR REGRESSOR: (RMSE): 0.244261092383292
	RANDOM FOREST REGRESSOR (RMSE): 0.253642787253796
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.24921057894451976
Arousal	
	LINEAR REGRESSOR: (RMSE): 0.22029498242775514
	RANDOM FOREST REGRESSOR (RMSE): 0.2087983146790251
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.20337597514635714
Dominance	
	LINEAR REGRESSOR: (RMSE): 0.18349916955705245
	RANDOM FOREST REGRESSOR (RMSE): 0.1793592254987321
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.17959059153365853
Dataset con rimozione della codifica dell'emozione e dei valori delle altre due dimensioni conosciute	
Valence	
	LINEAR REGRESSOR: (RMSE): 0.2553805884240083
	RANDOM FOREST REGRESSOR (RMSE): 0.27472311951434136
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.2715496084706218
Arousal	
	LINEAR REGRESSOR: (RMSE): 0.22336477429756832
	RANDOM FOREST REGRESSOR (RMSE): 0.2347738632609174
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.2311995028592001
Dominance	
	LINEAR REGRESSOR: (RMSE): 0.1949590765088183
	RANDOM FOREST REGRESSOR (RMSE): 0.1963338845781296
	GRADIENT BOOSTING REGRESSOR (RMSE): 0.19507465943740618