# Results of emotion recognition on improved speechflow

## Training with MSP-IMPROV and test on all IEMOCAP

| No. | Factors | | | Test Sets | | |
|---|---|---|---|---|---|---|
| | Content | Rhythm | Pitch | MSP-IMPROV | IEMOCAP_test | IEMOCAP_all |
| 1 | - | - | - | 39.65 | 32.81 | 35.63 |
| 2 | √ | √ | √ | 37.21 | 33.56 | 33.27 |
| 3 | × | × | × | 27.34 | 25.00 | 19.16 |
| 4 | √ | × | × | 33.22 | 36.02 | 37.72 |
| 5 | × | √ | × | 36.68 | 35.02 | 36.59 |
| 6 | × | × | √ | 28.26 | 36.43 | 32.30 |
| 7 | √ | √ | × | 37.39 | 33.30 | 35.25 |
| 8 | √ | × | √ | 34.34 | 31.42 | 32.37 |
| 9 | × | √ | √ | 35.98 | 29.09 | 33.28 |

Emotion recognition training with pulled training sets

| Training set | IEMOCAP | MSP-IMPROV |
|---|---|---|
| IEMOCAP | 59.08 | 28.14 |
| MSP-IMPROV | 32.81 | 37.21 |
| Pulled | 51.19 | 38.12 |

Mutual information between corpus labels and classification results

| No. | Factors | | | |
|---|---|---|---|---|
| | Content | Rhythm | Pitch | MI |
| 1 | √ | √ | √ | 0.9471 |
| 2 | √ | × | × | 0.9216 |
| 3 | × | √ | × | 0.3505 |
| 4 | × | × | √ | 0.6276 |
| 5 | √ | √ | × | 0.9544 |
| 6 | √ | × | √ | 0.9471 |
| 7 | × | √ | √ | 0.6772 |

越大越容易区分

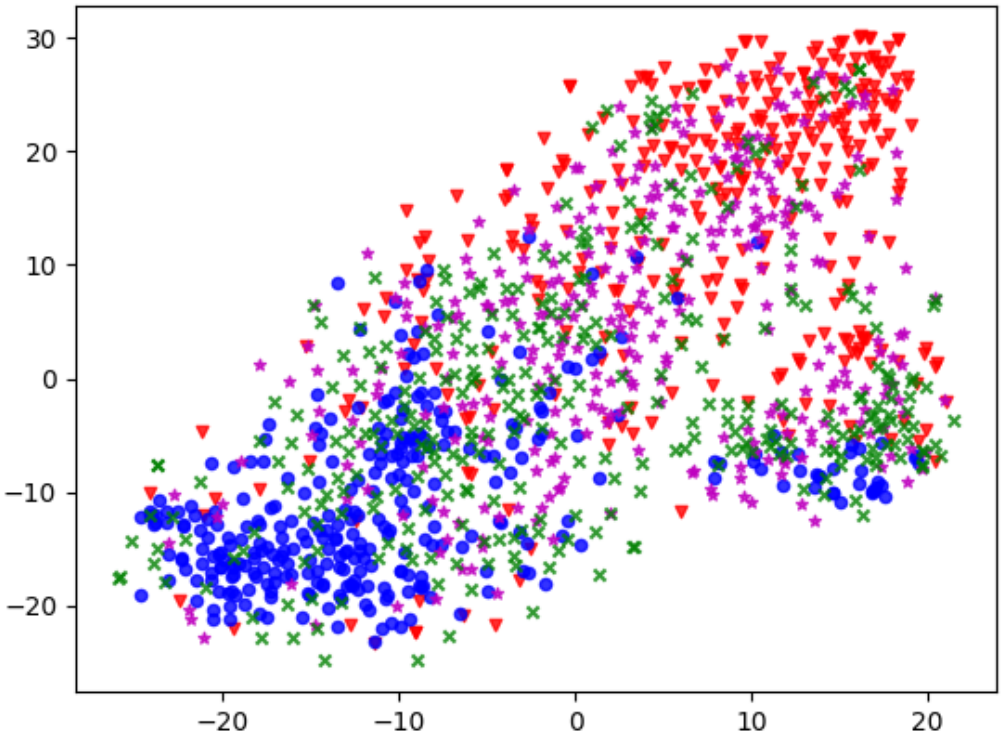
Mutual information between emotion labels and classification results in one corpus

| No. | Factors | | | MI in one corpus |
|---|---|---|---|---|
| | Content | Rhythm | Pitch | |
| 1 | √ | √ | √ | 0.7342 |
| 2 | √ | × | × | 0.6857 |
| 3 | × | √ | × | 0.3755 |
| 4 | × | × | √ | 0.5993 |
| 5 | √ | √ | × | 0.7019 |
| 6 | √ | × | √ | 0.7342 |
| 7 | × | √ | √ | 0.6263 |

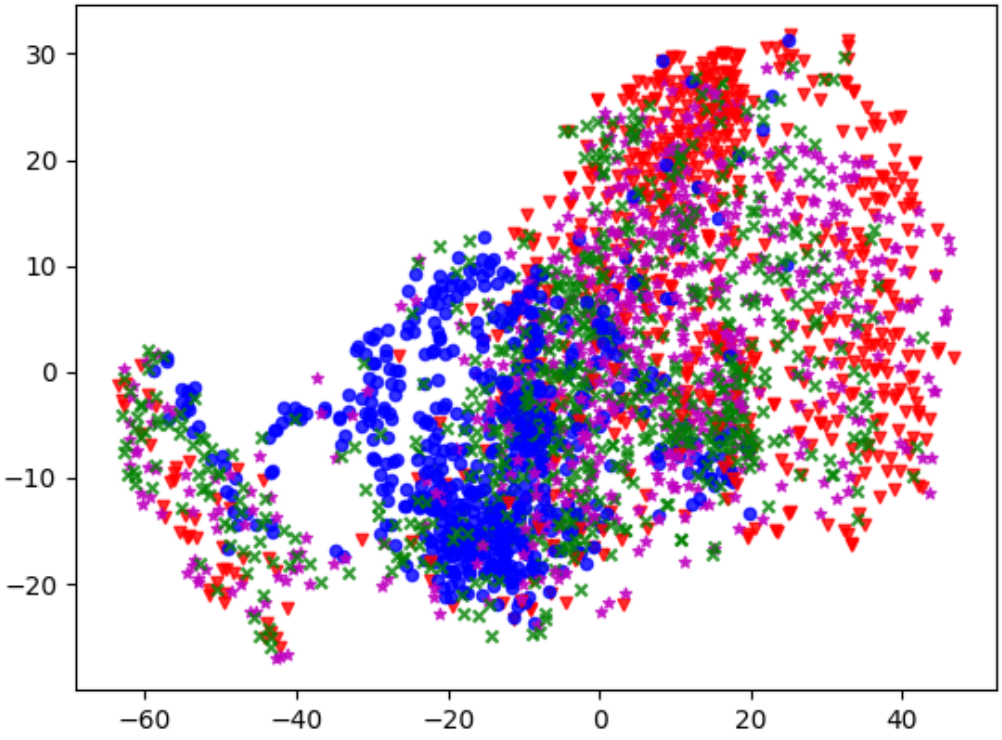
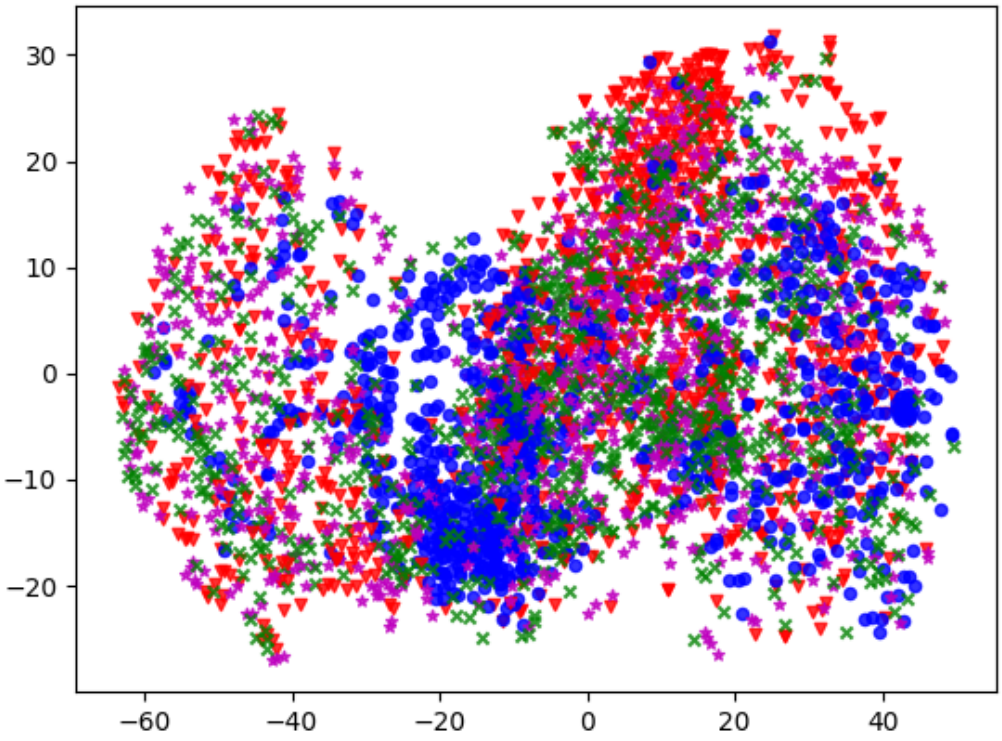
## t-SNE of embeddings for emotion

(red: angry, blue: sad, purple: happy, green: neutral)

### content




**rhythm**



**pitch**