

Emotion Analysis 22/23

Corpus Creation

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About Dataset

- Data Source: Kaggle
- Dataset URL: <https://www.kaggle.com/datasets/sankha1998/emotion>
- Author of Dataset: Sankha Shubhra Mondal
- Type of Data: Emotion in WhatsApp Status Data

Annotation Guideline

- Emotion Model: Discrete Emotions via Intensities(1-3) where 1 is lowest and 3 is highest
- Class Distribution: 6 Classes i.e. Anger, Fear, Joy, Sadness, Disgust, Surprise
- Based on the structure of text, we have given rating for all emotions on a scale of 1-3.

Eg. My phone screen is brighter than my future 😞

| Anger | Fear | Joy | Sadness | Disgust | Surprise |
|--------|-------|-------|---------|---------|----------|
| 3 High | 1 Low | 1 Low | 3 High | 1 Low | 2 Normal |



Independent Annotation

Inter Annotator Agreement Scores Class-wise i.e. Cohen's Kappa

| | |
|----------|--------------|
| Anger | 1 |
| Fear | 0.6826666667 |
| Joy | 0.6933333333 |
| Sad | 0.7200333333 |
| Disgust | 0.7966666667 |
| Surprise | 0.31 |



Correlation Table

Pearson Correlation for Akshat

| | Anger | Fear | Joy | Sadness | Disgust | Surprise |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Anger | 1.000000 | 0.515726 | -0.441891 | 0.434602 | 0.304238 | -0.169078 |
| Fear | 0.515726 | 1.000000 | -0.551070 | 0.622911 | 0.101331 | -0.089807 |
| Joy | -0.441891 | -0.551070 | 1.000000 | -0.714530 | -0.120243 | 0.421913 |
| Sadness | 0.434602 | 0.622911 | -0.714530 | 1.000000 | 0.155948 | -0.200347 |
| Disgust | 0.304238 | 0.101331 | -0.120243 | 0.155948 | 1.000000 | 0.142328 |
| Surprise | -0.169078 | -0.089807 | 0.421913 | -0.200347 | 0.142328 | 1.000000 |

Pearson Correlation for Tejaswi

| | Anger | Fear | Joy | Sadness | Disgust | Surprise |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Anger | 1.000000 | 0.526446 | -0.498611 | 0.539948 | 0.449542 | 0.066744 |
| Fear | 0.526446 | 1.000000 | -0.376839 | 0.426228 | 0.184591 | 0.099877 |
| Joy | -0.498611 | -0.376839 | 1.000000 | -0.764517 | -0.383627 | 0.263808 |
| Sadness | 0.539948 | 0.426228 | -0.764517 | 1.000000 | 0.390766 | -0.070029 |
| Disgust | 0.449542 | 0.184591 | -0.383627 | 0.390766 | 1.000000 | 0.079331 |
| Surprise | 0.066744 | 0.099877 | 0.263808 | -0.070029 | 0.079331 | 1.000000 |

- For Akshat: Anger-Fear(0.51), Anger-Sadness(0.43) are positively correlated whereas Anger-Joy(-0.44), Joy-Sadness(-0.71) are negatively correlated.
- For Tejaswi: Anger-Fear(0.52), Anger-Sadness(0.53) are positively correlated whereas Anger-Joy(-0.49), Joy-Sadness(-0.76) are negatively correlated.



Differences in Annotation

Eg. **Girls r like potato chips...you can't have 1**

Tejaswi's Annotation

| | | | | | |
|--------|-------|----------|---------|----------|----------|
| Anger | Fear | Joy | Sadness | Disgust | Surprise |
| 3 High | 1 Low | 2 Normal | 1 Low | 2 Normal | 1 Low |

Akshat's Annotation:

| | | | | | |
|-------|-------|--------|---------|---------|----------|
| Anger | Fear | Joy | Sadness | Disgust | Surprise |
| 1 Low | 1 Low | 3 High | 1 Low | 3 High | 3 High |

Analysis

- Total Datapoints: 50
- Total Classes: 6 i.e. Joy, Anger, Sadness, Fear, Disgust, Surprise
- Columns(4): Emotion rating on a scale(1-3) for each class , Text
- Pattern In Annotation: Anger(1) and Disgust(0.79) has high Cohen's Kappa whereas Surprise(0.31) has low Cohen's Kappa.
- Reason for Pattern: Certain factors like gender, time, race, emotional state, mental state, etc. are responsible for disagreement in annotation.
- Joy doesn't reflect the emotion for "funny", it's more inclined towards happiness.
- Also, Sarcasm is not reflected by any emotion, it is again different from funny.

Thank you

