

What A Sunny Day ☔️: Toward Emoji-Sensitive Irony Detection

Aditi Chaudhary* Shirley Anugrah Hayati* Naoki Otani* Alan W Black
{aschaudh, shayati, notani, awb}@cs.cmu.edu

BACKGROUND

What a sunny day ☀️ → Non-ironic
What a sunny day ☔️ → Ironic

- Social media text often contains non-verbal cues, such as **emojis**, for users to **convey their intention**.
- The **presence of emoji can change the meaning a text** as an emoji can have positive or negative tone.

OUR PROBLEM

- Analyzing the **role of emoji in irony**
- Irony can also relate to more serious issues
- In existing irony dataset from SemEval 2018 only **9.2% of the ironic tweets contain an emoji**.
- Tweets are crawled irony-related hashtags (i.e. #irony, #sarcasm, #not). **This does not capture all variations of ironic occurrences, especially those caused by emojis.**

OUR CONTRIBUTIONS

- Heuristics for emoji-sensitive irony data augmentation** and evaluate the results.
- A simple method for **generating ironic/non-ironic** texts using sentiment polarities and emojis.

Ironic	😂	😞	😏	🙄	😬	😍	🙊	👉	😏	👍
	42	26	12	11	10	9	9	9	9	8
Non-ironic	😂	🙄	😏	😬	😡	❤️	👉	❤️	👊	👍
	49	22	16	14	14	11	11	11	9	8

MANUAL DATA AUGMENTATION

CASE 1

My year is ending perfectly 😊 [IRONIC]
My year is ending perfectly 😊❤️ [NON-IRONIC]

CASE 2

Finally went to the doctor and feeling so much better.
Finally went to the doctor and feeling so much better. 🙄

CASE 3

Another day in paradise haha
Another day in paradise haha 😊❤️

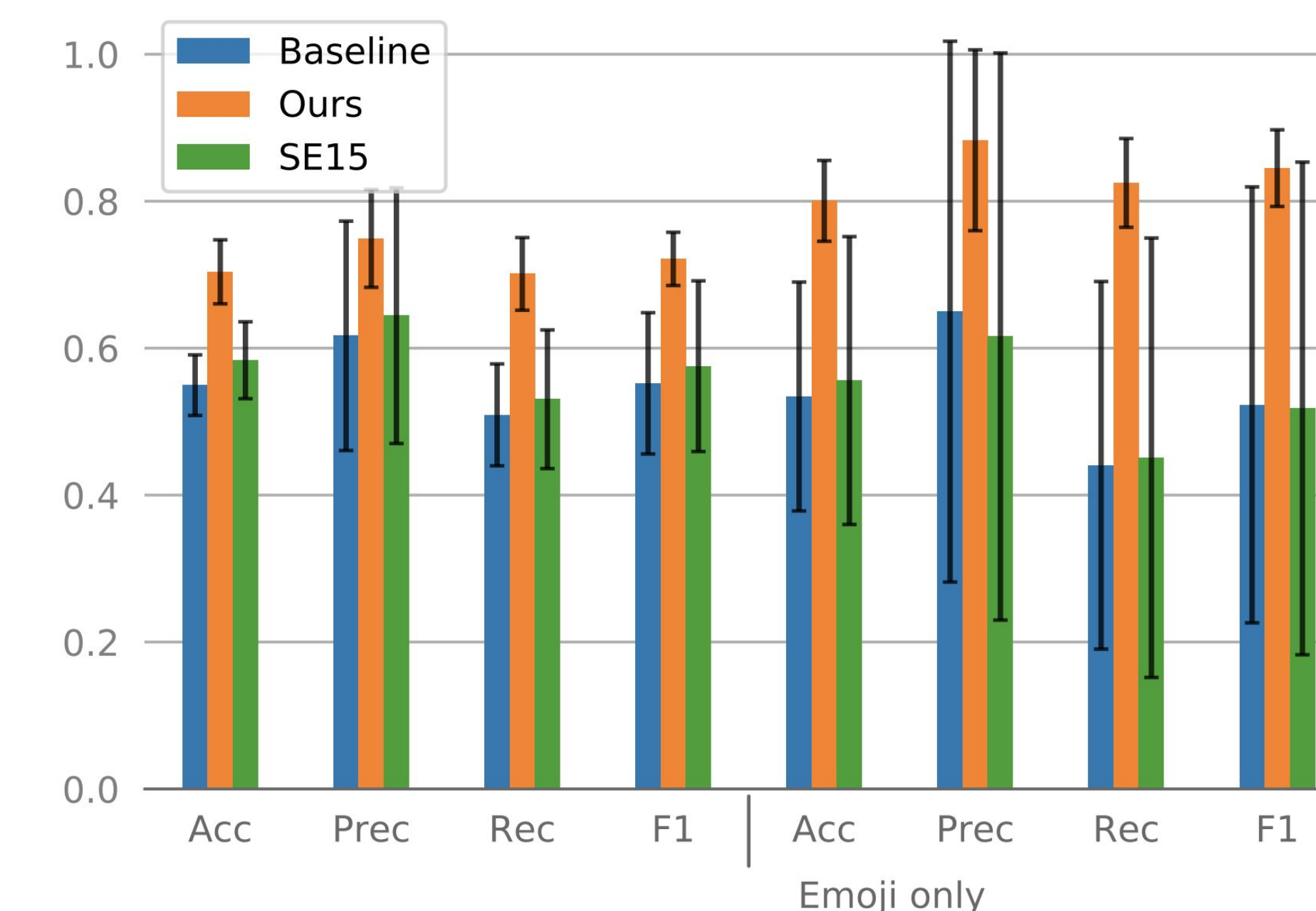
Cases	Fleiss' Kappa	Percent Agreement
Case 1	0.49	62%
Case 2	0.02	30%
Case 3	0.23	52%

IMOJI DATASET

- Collect emoji-sentiment pairs (Kralj Novak et al., 2015)
- Collect positive & negative sentiment tweets from SemEval 2018 Affect Dataset
- Generate ironic/non-ironic tweets by adding emoji at the end

Text	Tweet	Emoji	Label
now that I have my future planned out, I feel so much happier #goals #life #igotthis #yay 😊	Pos	Neg	Irony
Never let me see you frown ❤️	Neg	Pos	?
MC: what are you listen to these days? Bogum: these days I feel gloomy I listen to ccm (spiritual song) often. Church oppa mode: 😊	Neg	Pos	No
Love your new show #drivenminnie ❤️	Pos	Pos	Non

EXPERIMENT



Model: NTUA-SLP system from SemEval 2018. 2-layer biLSTMs, self-attention mechanism with logistic regression classifier

Baseline: SemEval 2018
Ours: SemEval 2018 + Iemoji Augmented Data
SE15: SemEval 2018 + SemEval 2015 Ironic Tweets

MULTI-LINGUAL TRANSFER

