

Increasing Robustness for Cross-domain Dialogue Act Classification on Social Media Data.

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Task

Utterance	Label
"We are free tomorrow night, right?"	<i>propositional question</i>
"No, the final Grand Prix is on!"	<i>disagreement</i>

Task

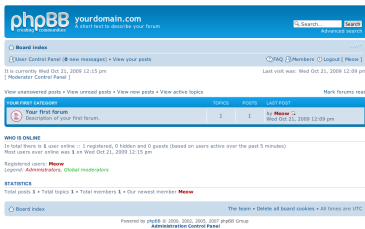
- ▶ Most work on Dialogue Act Classification is on (phone) conversations
- ▶ Not much public datasets on web data
- ▶ NPS Chat corpus is forum data from 2006

Task

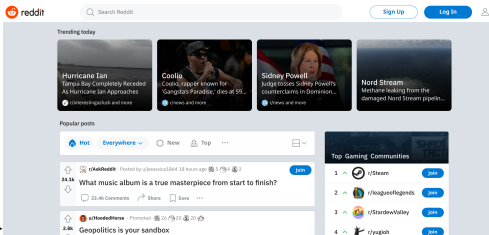
Label	Example
propositionalQuestion	“r u serious?”
setQuestion	“what list should i put him in?”
choiceQuestion	“shaken or stirred?”
inform	“i wanna chat”
elaborate	“and dr phil said so.”
continuer	“I know, but it threw me”
agreement	“i agree”
disagreement	“no, I didnt even look.”
correction	“i meant to write the word may.”

Label	Example
greeting	"hey ladies"
goodbye	“see u all later’s”
positiveExpression	“yay!”
negativeExpression	“ewwww lol”
offer	“il get you a cheap flight to hell:)?”
suggestion	“We should have a club”
instruct	“shut the fuck up.”
acceptAction	“yeah i should toss it”
declineAction	“i don’t wanna”
misc	:tongue:

Task



The screenshot shows a phpBB forum page for 'yourdomain.com'. The header is blue with the phpBB logo and a search bar. Below the header, there's a navigation bar with links like 'Board index', 'User Control Panel', and 'View your posts'. The main content area displays a forum topic titled 'Your first forum' with a description. To the right, there's a sidebar with 'Who is online' and 'Statistics' sections. The footer contains copyright information and a link to the administration control panel.



The screenshot shows the Reddit homepage. At the top, there's a search bar and links for 'Sign Up' and 'Log In'. Below the header, there's a 'Trending today' section with four featured posts: 'Hurricane Ian Tampa Bay Completely Receded', 'Coolio Cooks rapper known for Gangsta's Paradise', 'Sidney Powell Judge tosses Sidney Powell's counterclaims in Dominion...', and 'Nord Stream Methane leaking from the damaged Nord Stream pipeline...'. The main content area features a 'Popular posts' section with a post from r/KatReddy titled 'What music album is a true masterpiece from start to finish?'. To the right, there's a 'Top Gaming Communities' section with a list of subreddits like r/Steam, r/Noobzofthegods, r/StardewValley, and r/pugloft.

Task

Split	In-domain	Out-of-domain
train	4,800	—
dev	600	853
test	600	852

Table: Dataset splits for both in-domain and cross-domain.

Task

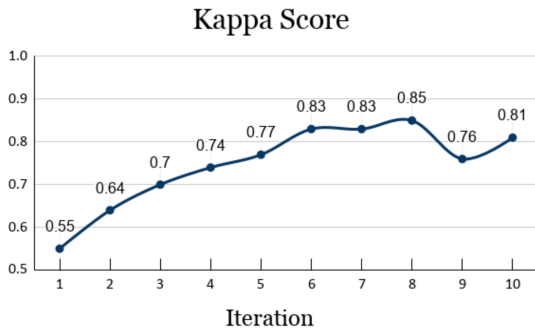


Figure 1: Kappa score for 10 iterations of annotation

Baseline

- ▶ deberta-v3-base
- ▶ CLS token
- ▶ **77.11** macro F1 in-domain and **53.92** F1 cross-domain

How to increase robustness?

MoNoise: A Multi-lingual and Easy-to-use Lexical Normalization Tool

Rob van der Goot

Center for Language and Cognition

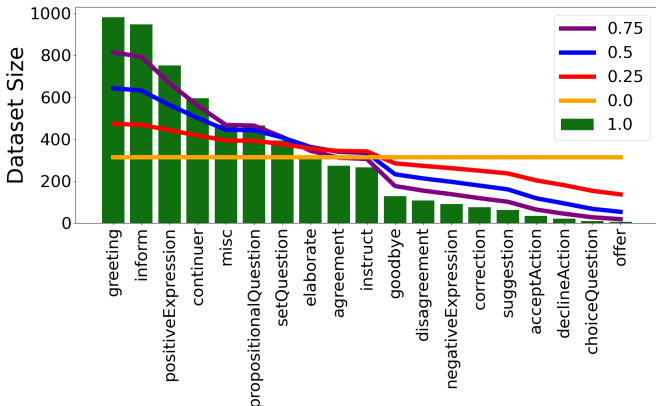
University of Groningen

`r.van.der.goot@rug.nl`

1. Lexical Normalization

- ▶ First normalize input, then classify
- ▶ Performance slightly lower on both domains

How to increase robustness?



2. Label resampling

- ▶ Multinomial distribution $\alpha = .9$ and $.8$
- ▶ Gain 1.5 macro-f1 ID & OOD

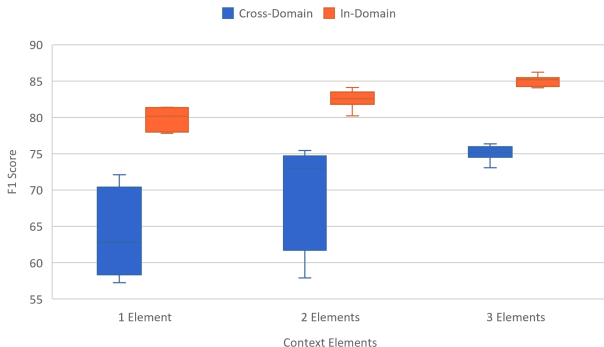
How to increase robustness?

3. Context

- ▶ label (predicted)
- ▶ sender (binary)
- ▶ text

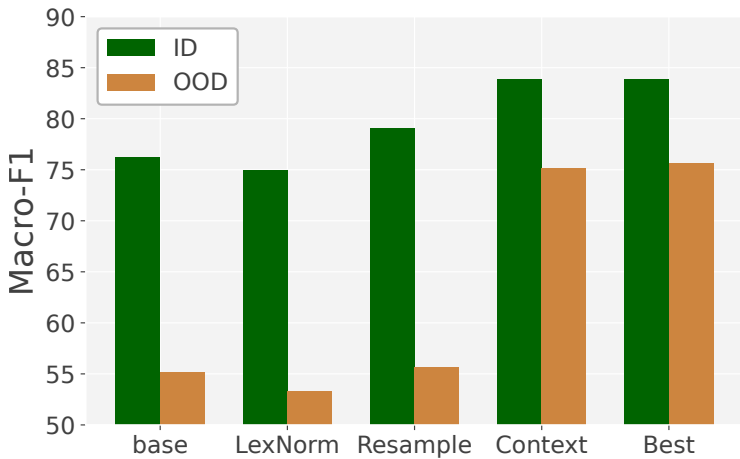
How to increase robustness?

3. Context



► Gains of 7 and 20 points!

How to increase robustness?



How to increase robustness?

Thanks for your attention!

Code and data available at:

`https:`

`//github.com/marcusvielsted/DialogueActClassification`