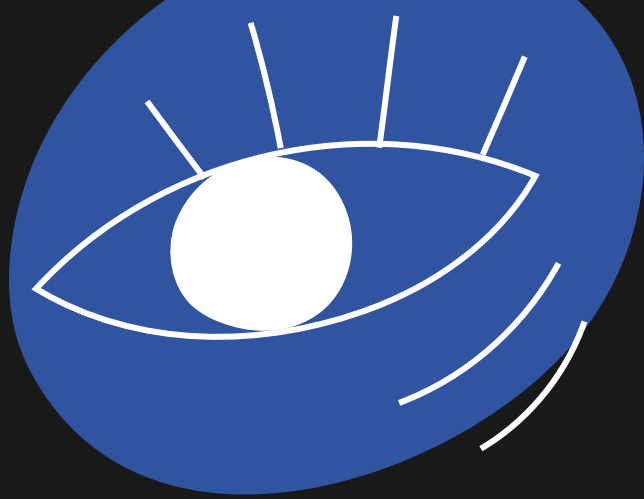


Automatic Misogyny Identification

with AlBERTo, UmBERTo and XLM-T

Task **description**

EVALITA 2020 task: Automatic Misogyny Identification (AMI) in Italian tweets

Recognize if a tweet is misogynous or not, and if misogynous, whether it's aggressive

Task importance: address growing problem of online misogyny and develop NLP solutions for diverse languages and cultures

Problem **modeling**

[redacted]
@[redacted]

nonmisogynous

Mi sono svegliata ora [redacted] [redacted] ho dormito tutto il pomeriggio

[redacted]
@[redacted]

misogynous

@[redacted] Hai ragione, per esempio modestamente questo tweet è meraviglioso e nessuno [redacted] [redacted], l'avesse scritto una [redacted] [redacted] avrebbe 10.000 like, ti pare giusto?

[redacted]
@[redacted]

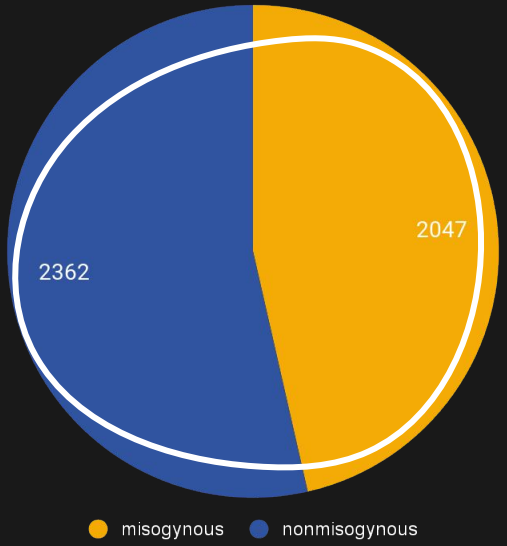
aggressive

@[redacted] Taci che fai più bella figura

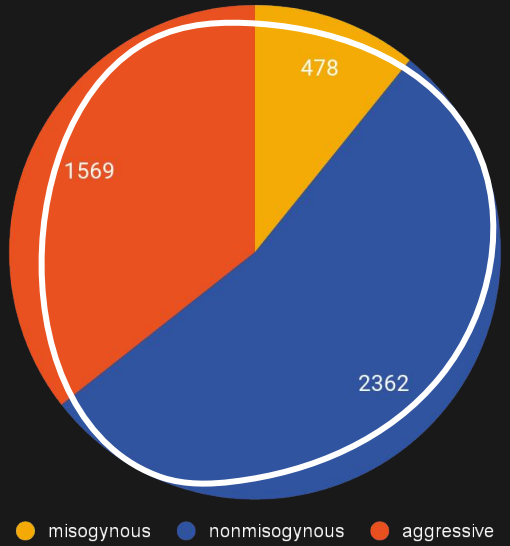
binary
or
ternary?

Data **distribution**

Binary modeling



Ternary modeling



Related work: **AlBERTo**

Outperformed
top submitted model
in 2020 AMI task (Muti et al.)

Ternary classification

Hyperparameter tuning

A. Muti

A. Barrón-Cedeño

Related work: **UmBERTo**

Comparison of three BERT models **AlBERTo, UmBERTo, GilBERTo** in 2018 AMI task (Santini)

Binary classification

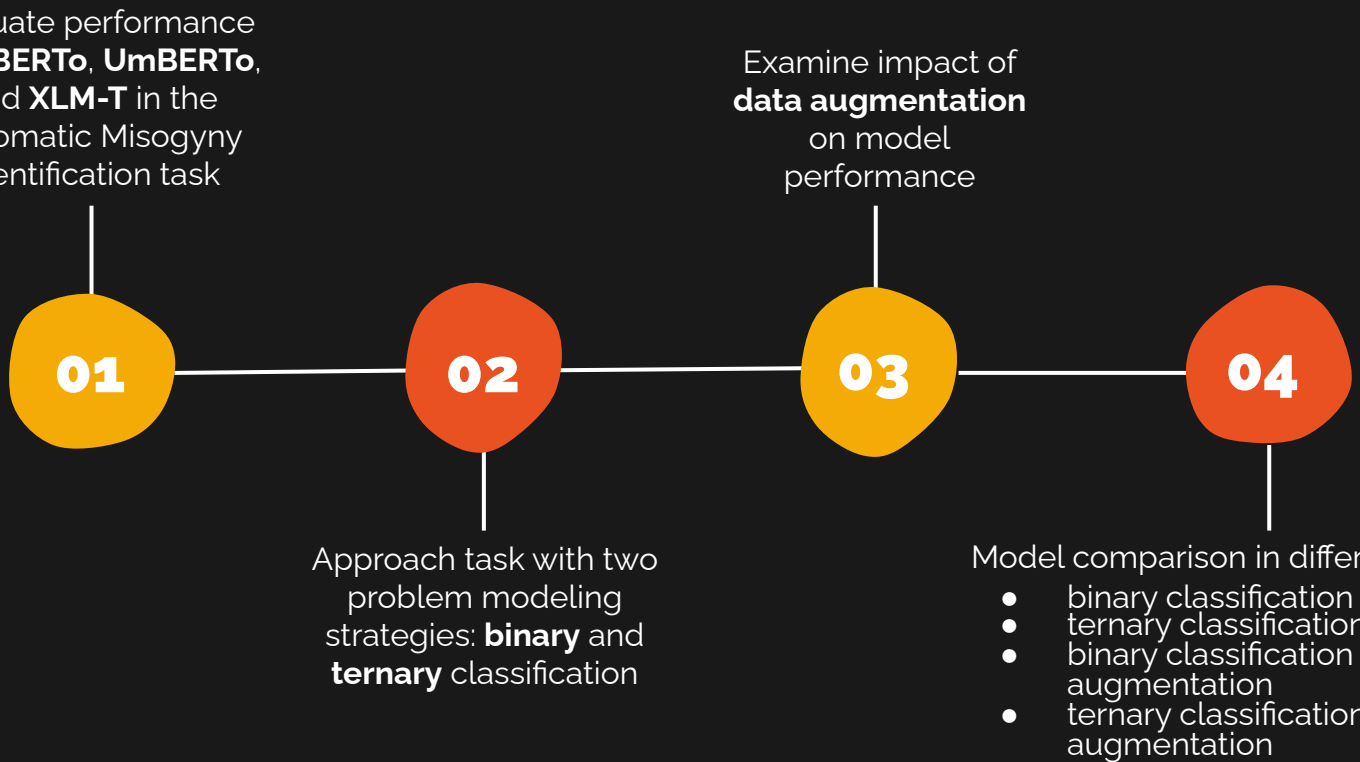
UmBERTo

emerged as the best performer

All models **outperformed**

systems evaluated in AMI Evalita 2018 campaign

Project **goals**



Language **models**

AlBERTo

Italian BERT model for Twitter language understanding

UmBERTo

RoBERTa-based Italian Language Model trained on large Italian Corpora

XLM-T

Multilingual Language Model Toolkit for Twitter

Data **augmentation**

Binary classification: **slight** imbalance
Ternary classification: **significant** imbalance

Techniques applied:

- Random character **swap**
- Random character **insert**
- Random character **deletion**

Performed using the **NLPAug** library

Training

AlBERTO, UmBERTo

Epochs: 8
Batch size: 16

XLM-T

Epochs: 5
Batch size: 8

Evaluation **metrics**

Accuracy

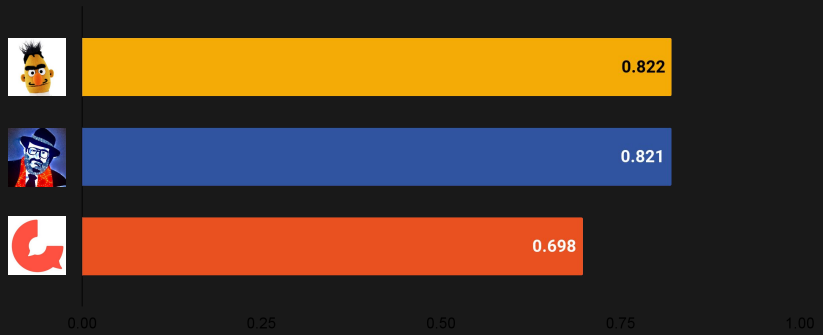
Binary classification
Santini (UmBERTo), AMI 2018

Weighed F1-score

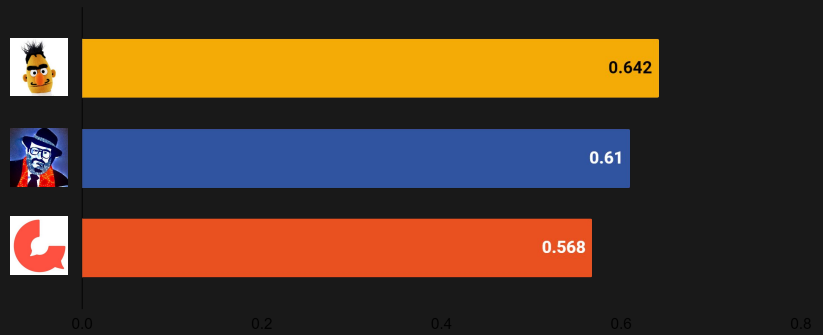
Ternary classification
Muti et al., AMI 2020

Experimental **results**

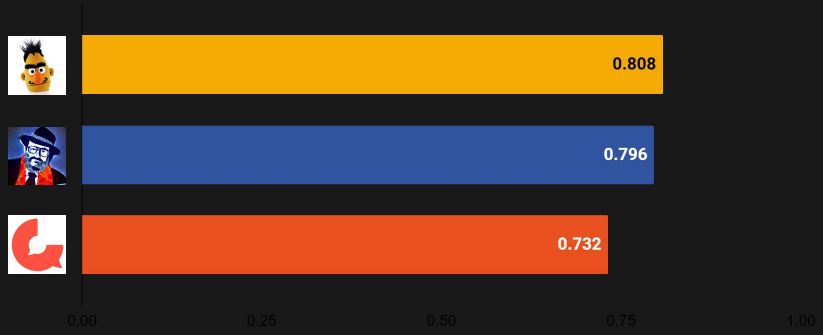
Binary Classification (**Accuracy**)



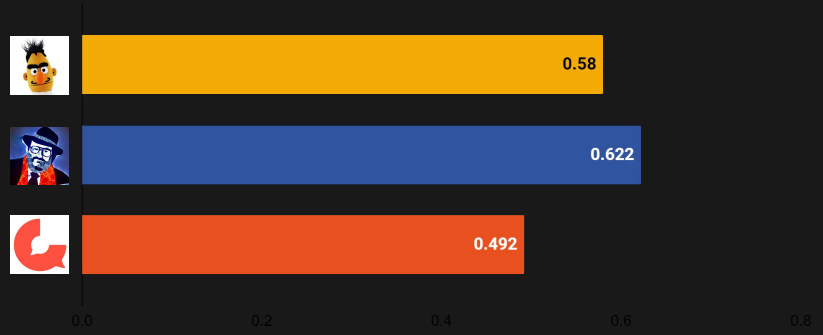
Ternary Classification (weighed **F1-score**)



With **Data Augmentation**



With **Data Augmentation**



Final **considerations**

Superior performance of AlBERTo and UmBERTo in both binary and ternary classification tasks

Domain- and language-specific model performed better: importance of dedicated models for specific languages and tasks

Negative impact of employed data augmentation techniques:

- may have introduced artificial patterns that dampened the model's ability to generalize to new data
- Solution: alternative DA techniques or tools like weighted loss function or undersampling

Thank you for your attention!

Please feel free to ask any questions

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