

Italian NLP for Everyone: Resources and Models from EVALITA to the European Language Grid

Valerio Basile*, Cristina Bosco*, Michael Fell*, Viviana Patti*, Rossella Varvara†

*University of Turin, Italy †University of Fribourg, Switzerland

Goals and Outcome

- Broaden the ELG portfolio with linguistic resources for Italian, capitalizing on the work done in the last ten+ years within EVALITA:

the evaluation campaign of NLP tools for Italian

- further support for underrepresented languages
- sharing of knowledge within the NLP community

- Integrate systems and baselines as a pool of web services with a common interface

- Experiments with multi-task learning

The ELG now covers the majority of language technology developed for Italian in the last 10 years

Broad spectrum of linguistic phenomena, language genres and domains (e.g., social media)



Subcontractor



Andrea Bolioli



Alessio Bosca

Project coach: Khalid Choukri (ELRA)

Experiment: Multi-task Learning

- HaSpeeDe 2 (Sanguinetti et al., 2020) from EVALITA 2020 (ELGID: 7498)

- IronITA (Cignarella et al., 2018) from EVALITA 2018 (ELG ID: 7372)

Task: IronITA task A (Irony Detection).

Model	P _{macro}	R _{macro}	F1 _{macro}
AIBERTO	.786	.767	.761
MTL _{irony}	.779	.772	.771

Experiment: Ensemble Systems

3 models for HS detection

~10 lines of code!

Majority ensemble

```

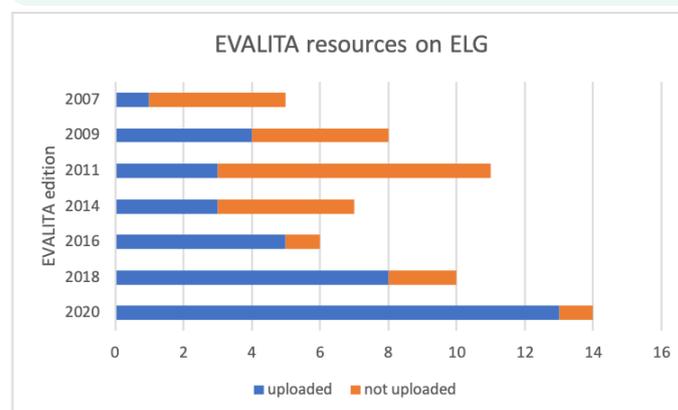
hansel = Service.from_id(7370)
montanti = Service.from_id(5315)
models = [hansel, montanti]
text = "this is an example sentence"
results = []
for model in models:
    results.append(model(request_input=text, request_type="text"))
    % model' returns 1 or 0, depending on classification result
ensemble_label = 1 if sum(results) == 2 else 0
% example for two models, ensemble label is 1 if both labels are 1
return ensemble_label
    
```

Model	P _{macro}	R _{macro}	F1 _{macro}
hs-rug	.745	.743	.742
hs-fbk1	.742	.741	.740
hs-hansel	.747	.746	.746
hs-montanti	.744	.743	.743
ensemble _{≥3}	.765	.764	.764

Linguistic Resources

- 43 corpora
- 1 lexical/conceptual resource
- Metadata and terms of availability

Frequency	Tag
14	SentimentAnalysis
5	Parsing
4	memes recognition
4	memes classification
4	PolarityDetection
4	ImageUnderstanding
4	DependencyParsing
3	IronyDetection
3	ConstituencyParsing
68	other



Models and Systems

8 systems:

- pre-neural models
- neural networks
- general neural language models (e.g. AIBERTO)

Frequency	Tag
12	TextCategorization
11	HateSpeechRecognition
1	PosTagging
68	other

Project on ELG: <https://live.european-language-grid.eu/catalogue/#/resource/projects/1397>

Project website: <http://evalita4elg.di.unito.it/>