

PAN @ CLEF 2022

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Stylometry and Digital Text Forensics



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- Authorship Verification
 - Profiling Irony and Stereotype Spreaders on Twitter
 - Style Change Detection

TIRA experimentation platform supports software submissions [www.tira.io]

Software submissions ensure replicability (>300 softwares)

Authorship Verification Task

Efstathios Stamatatos (University of the Aegean) Mike Kestemont (University of Antwerp), Krzysztof Kredens, Piotr Pezik, Annina Heini (Aston University), Janek Bevendorff, Benno Stein and Martin Potthast (Bauhaus-Universität Weimar) and Martin Potthast (Leipzig University)

- Aim: Given two texts belonging to different discourse types, the task is to determine whether they are written by the same author.
 - Discourse types have significant differences concerning communicative purpose, intended audience, or level of formality, then it is very challenging to distinguish authorial characteristics that remain intact across discourse
 - Discourse types strongly correlates with text length and cross-discourse type authorship verification can also be used to study the effect of text length in the effectiveness of authorship verification approaches

Authorship Verification

- Participation:
 - 7 participants from 5 countries.
- Highlights:
 - This year, we focused on a very challenging version of the authorship verification task where text pairs of different discourse types are used.
 - When texts differ in communicative purpose, intended audience, or level of formality, it is very challenging to identify stable characteristics associated with authors across these discourse types.
 - The effectiveness of all submissions in the cross-discourse type datasets was comparatively low, some as low as a random-guess baseline.
- Shared task presentation:
 - Tuesday 6, 17:20 - 18:50, **overview** presentation and **lab session**.

Profiling Irony and Stereotype Spreaders on Twitter

Reynier Ortega (UPV), Berta Chulvi (UPV), Francisco Rangel (Symanto), Paolo Rosso (UPV), and Elisabetta Fersini (BICOCCA)

- Aim: Given a Twitter feed, determine whether its author is **keen to spread irony or not**, with special focus on users who use irony towards **stereotypes**.
 - With **irony**, language is employed in a figurative and subtle way to mean the opposite to what is literally stated. In case of **sarcasm**, a more aggressive type of irony, the intent is to mock or scorn a victim without excluding the possibility to hurt.
 - **Stereotypes** are often used, especially in discussions about controversial issues such as immigration or sexism and misogyny.
 - The focus has been on profiling ironic authors in Twitter with special emphasis will be given to those authors that employ **irony to spread stereotypes**, for instance, towards women or the LGTB community.
- Subtask: **Profiling Stereotype stance on Ironic Authors** subtask is to detect whether ironic users employed stereotypes to hurt the target or to somehow defend it.

Profiling Irony and Stereotype Spreaders on Twitter

- Participation:
 - 65 participants from 12 countries
- Highlights:
 - This task opens a new way to study ironic language to perpetuate stereotypes and constitutes a starting point for profiling authors who frame aggressiveness, toxicity and messages of hatred towards social categories such as immigrants, women and the LGTB+ community, using an implicit way to convey hate speech employing stereotypes.
- Shared task presentation:
 - Monday 5, 15:20 - 16:50, **keynote** "Stereotyping: explanation and fallacies from a probabilistic and statistical perspective" by *Lara Fontanella* and **overview** presentation
 - Monday 5, 17:10 - 18:30, **keynote** "Fast and furious: when irony meets hatred and prejudice in social media" by *Viviana Patti* and **lab session**.

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Style Change Detection

Eva Zangerle (Universität Innsbruck), Maximilian Mayerl (Universität Innsbruck) , Martin Potthast (Leipzig University) and Benno Stein (Bauhaus-Universität Weimar)

- Aim:
 - (1) For a text written by two authors, which contains a single style change only, find the position of this change, i.e., cut the text into the two authors' texts on the paragraph-level.
 - (2) For a text written by two or more authors, find all positions of writing style change, i.e., assign all paragraphs of the text uniquely to some author out of the number of authors assumed for the multi-author document.
 - (3) For a text written by two or more authors, find all positions of writing style change
- Participation:
 - 9 participants from 7 countries

Style Change Detection

Eva Zangerle (Universität Innsbruck), Maximilian Mayerl (Universität Innsbruck) , Martin Potthast (Leipzig University) and Benno Stein (Bauhaus-Universität Weimar)

- Highlights:
 - The task is evaluated on a dataset compiled from an English Q&A platform.
 - The best results were obtained by utilizing pre-trained language models (BERT or Electra) to compute semantic representations of the texts across all three tasks.
 - Altogether, we consider the achieved performance values as solid and promising.
- Shared task presentation:
 - Tuesday 6, 15:30 - 17:00, **overview** presentation and **lab session**.