Literature Review and References

**Literature Review**

1) (Fatima et al., 2018) highlighted the various corpora that are available for author profiling and found a gap which is Short Messaging Service (SMS). In their work they have collected data from SMS’s and created a benchmark multilingual corpus which is intended to aid in future research and development and consists of seven demographic traits. Although their work focuses on profiling authors, they were only successful in gender profiling through their corpus. They have failed to consider the profiling of author traits and included it as potential future research. However, their approach to this method of profiling is novel and in predicting gender they have achieved a 95% accuracy.

2) (Ouni, Fkih and Omri, 2021) through their work focus on how author profiling has become more than a critical issue. In their work they have used twitter data mainly in the English and Spanish languages to identify the type of user that is writing a tweet, and their focus is to identify if the author is a bot or human. Along with this classification they have also followed the works of (Fatima et al., 2018) to profile the gender of the author. While their approach to identifying bots is novel, and a gender profiling is done on the authors who are not bots, they too have failed to profile any author traits.

3) (Mamgain, C Balabantaray and K Das, 2019) in their research highlighted how author profiling can be used for various purposes. Their work mainly focuses on language detection and gender profiling of author by using the PAN 2017 dataset. Their approach included a bunch of various ML models to, speficifally two for prediucting gender, and four for [redicting language. While gender profiling is widely done as wee can see from the works ofd Ouni and Fatima, predicting language is novel and can be used as factor to profile the author traits.

4) (Polignano, de Gemmis and Semeraro, 2020) very well highlight the various gaps in author profiling, due to which abundant amount of research has been developed. In their work they use a NLP based BERT approach. They have an interesting take on this task as they compare their approach to the classical methods of author profiling. Alogn with gender they have also profiled the age, fame and occupation of the author. Though they concluded that their work was not accurate as they expected, it is a step towards profiling authors based on various traits.

5) (Estival et al., n.d.) through their research aim at profiling authors based on emails, as seen from previous approaches, which include SMS, tweets etc, their work only adds to the fact that data from an author can be of any type. In their work they not only profile the demographic traits, but they also used five psychometric traits such as agreeableness, extraversion, neuroticism, conscientiousness, openness. Their work is inspiring as unlike the usual demographics, they add specific character traits. By analysing emails they aim to profile author to identify threats, marketing intelligence etc.

6) (Hsieh et al., n.d.) In their work make use of Facebook corpus specifically in the Portuguese language, as they have identified that research on English language is abundant. This is true and their work diversifies author profiling. Through their work they have also addressed two less usual profilings which are religiosity, and IT background status. If combined with the works of (Estival et al., n.d.), this could be on the way to building a full author profiling framework. Their work gave best results when using the TF-IDF model compared to Word2Vec and lexical LIWC+P models, which led them to conclude that psycholinguistic knowledge may be more suitable for personality and sentiment recognition than for the present author profiling tasks.

7) (Pham, Tran and Pham, 2009) through their work, although old provide the first ever author profiling framework for Vietnamese blogs. Their work focuses on the use of their proposed framework to profile authors based on age, gender, geographic origin and occupation. An interesting approach to this research is that they have profiled authors purely based on the usage of language. With their work giving our promising results of about 80% accuracy, their framework could be used to enhance the research by (Hsieh et al., n.d.) and (Estival et al., n.d.). An improvement of their system could be to use language to detect psychometric traits as discussed by (Estival et al., n.d.).

8) (López-Monroy et al., 2015) in their work discuss how most of the work in author profiling is divided into sub-classes and focus their work mainly on online platforms. They discuss that using a BoW (bag-of-words) approach, although popular have gaps that it fails to account for and they are the sparsity and high dimensionality of the representation, and the failure to capture relationships, other than mere occurrence, among terms. Their study focuses on alternate document representations which captures the term-profile and term-subprofile to deal with the shortcomings of the use of BoW model. One drawback of their work is that they only considered profiling age and gender. But their work can be used to expand to profile other traits.

9) (Rosso et al., 2018) in their study about author profiling on social media mainly twitter, focus their research on the Arabic language. They do this to stress the gap between the standard use of English and other languages. In their work they not only profile authors based on their age and gender, but most importantly a novel approach to find out if the is the author is deceptive and irony detection. Their future scope opens a gap for research to be done using the Arabic language more to profile authors automatically, and use their work in the field of cyber security. Their has capabilities to be combined with psychometric traits as discussed by (Estival et al., n.d.) and that with the works of (Hsieh et al., n.d.) to sketch out a profile framework.

10) (Mishra et al., 2018) through their research highlight another aspect to author profiling. Mainly to find out if the authors have abusive behaviors. Their work was done using the classical social media mainly twitter to gather data and propose a novel approach that incorporates community-based profiling. Although a well thought our idea to check if the authours have abusive tendencies, they mainly focus on using lexical and semantics of twitter data. This not only opens scope to use other methods as their proposal also outperforms the state-of-the art in abuse detection.

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