



UNIVERSITÀ DEGLI STUDI DI NAPOLI
FEDERICO II

itee^{PhD}
information technology
electrical engineering



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UNI
NA

Areeba Umair

First Year Presentation

Tutor: Prof. Elio Masciari
Co-Tutor: Prof. Vincenzo Moscato

Cycle: XXXVI

Year: First

My background

- MS in Computer Science (MSCS)
- Master's thesis “Career trajectory prediction of employees”
- Currently PhD student of the ITEE program
- Ph.D. started on 1st November 2020
- UNINA Scholarship

Research field of interest

My research field of interest is

➤ Data analytics

a) Sentimental analysis

b) Social media analysis

Summary of study activities

Ad Hoc:

- Digital Forensics; methods, practices and tools (3 cr.)
- Statistical data analysis for science and Engineering research (4 cr.)

Schools:

- 2021 Spring School on Transferable Skills (2 cr.)
- AIRO PhD School 2021 and 5th AIROYoung Workshop (3.6 cr.)

Msc. Courses

- Big Data Analytics and Business Intelligence (MSc. 6 cr.)
- Hardware and Software Architectures for Big Data –Mod. B (6 cr.)

Others

- Safety Training Course (0 cr.)

Summary of study activities

- **Seminars/Conferences: (Attended 25 seminars)**
- Antonio Picariello lectures on data science (10 seminars, 3.1 cr.)
- Seminars related to Machine learning/ NLP/ Data science/Big data/Artificial intelligence/ Reinforcement learning/ Deep Learning (5 seminars, 1.4 cr.)
- IEEE seminars about publications (3 seminars, 0.8 cr.)
- Few seminars on risk assessment, 5g technologies and robotics.

First Year Credits Earned

| | Courses | Seminars | Research | Tutorship | Total |
|------------------|-------------|------------|-----------|-----------|-------------|
| Bimonth 1 | 3 | 1 | 10 | 0 | 14 |
| Bimonth 2 | 3.6 | 1.5 | 5 | 0 | 10.1 |
| Bimonth 3 | 4 | 3.2 | 5 | 0 | 12.2 |
| Bimonth 4 | 14 | 2.2 | 5 | 0 | 21.2 |
| Bimonth 5 | 0 | 0.8 | 5 | 0 | 5.8 |
| Bimonth 6 | 0 | 0 | 5 | 0 | 5 |
| Total | 24.6 | 8.7 | 35 | 0 | 63.3 |
| Expected | 20 | 5 | 35 | 0 | |

Research activity: Overview

- Problem: “COVID-19 sentimental analysis using social media data”



The social media has a vast amount of user-generated data.



Sentimental analysis is the field where people's feeling are extracted.



COVID-19 pandemic has affected people's lives all over the globe.



It caused the feelings of fear, anxiety, anger, depression and other issues.



Research Activity 1

The review of thirty primary studies has been conducted. The purpose of conducting this review was to explore and identify:



Benchmark data sets and well-known data sources



The volume of data used in individual study.



The types of approaches or techniques.



Application areas of COVID research



Future trends.

Research Activity 1

Results of the review/survey

Data Sources

- Twitter
- Online media and forums

Approaches

- Machine learning based approaches, lexicon-based approaches, and hybrid approaches.
- Naive Bayes and SVM

Application Areas

- Students' mental health
- Reopening sentiments,

Future trends

- Explore public trust and confidence in existing policies.
- More specific topics can be analyzed to help policy maker.

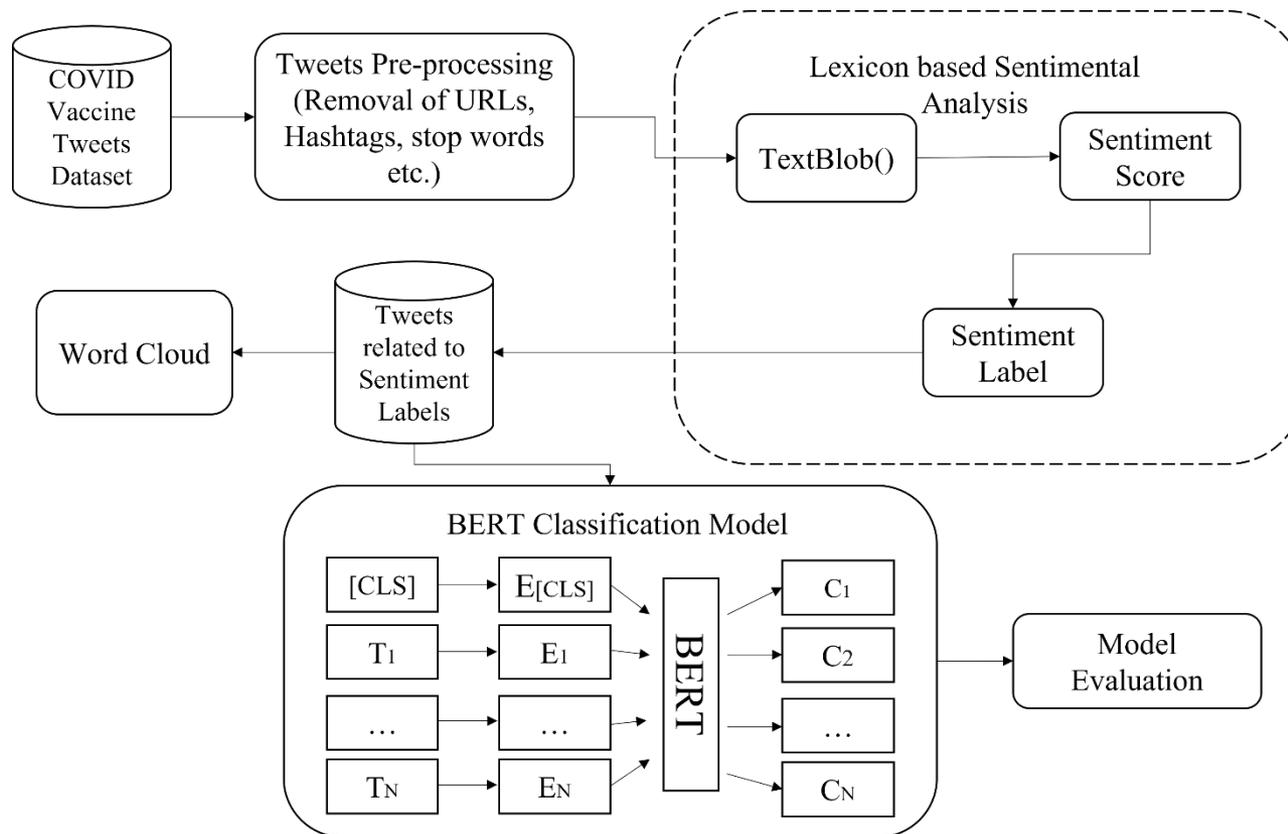
Research Activity 2

Sentimental Analysis of tweets towards COVID-19 Vaccines Using BERT model

- To ensure the acceptance of COVID vaccine among the population, the government should understand the people sentiments towards vaccine.

Research Activity 2

Methodology



Products (if any, otherwise remove)

| | |
|------|--|
| [P1] | Umair, Areeba, et al. "Spatiotemporal Analysis of Web News Archives for Crime Prediction." Applied Sciences 10.22 (2020): 8220. (Accepted, IF= 2.679) |
| [P2] | Umair, A., Masciari, E., & Habib Ullah, M. H. (2021, July). Sentimental Analysis Applications and Approaches during COVID-19: A Survey. In 25th International Database Engineering & Applications Symposium (pp. 304-308). (Accepted B Ranked conference) |
| [P3] | Areeba Umair, Elio Masciari, "Using High Performance Approaches to Covid-19 Vaccines Sentiment Analysis" 30th Euromicro International Conference on Parallel, Distributed and Network-based Processing 2021 (Submitted) |
| [P4] | Areeba Umair, Elio Masciari, "Artificial Intelligence Based Analysis of Positive and Negative Tweets Towards COVID-19 Vaccines" IEEE International Conference on Bioinformatics & Biomedicine, 2021 (Submitted) |

NEXT YEAR

- We will go through refining sentimental analysis for addressing other topics i.e., fake news.
- Investigate anomaly detection.