A. Proposal Information

Project title	Sentiment analysis of public opinion related to military operations & politics
Project Challenge Area	Machine Learning & Natural Language Programming (AI)
School / College / University	Egyptian Russian University
Department/ Faculty (for University)	Faculty of Artificial Intelligence
Industrial partner (if any)	

B. Advisor Information

Advisor Name	Prof. Dr. Saeed Hassan Ibrahim Saeed
Title	Professor, Vice Dean of Education and Students Affair
Work Address	Faculty of Artificial Intelligence, Egyptian Russian University
Mobile	00201016241424
E-mail	Saeed-hassan@eru.edu.eg
Brief summary of expertise	I am a professor from the Scientific Committee for Electronics, Computers and Systems Engineering at the Supreme Council of Universities since October 2009 and I have more than 65 research papers in the field of Computer Engineering and Electronics published in national and international journals and conferences. I have teaching experience in the field of Electronics and Computer Engineering exceeds the teaching of more than 20 courses as well as work in the development of plans and curriculum in the field of specialization according to international (ABET) and National (NCAAA – NAQAAE) standards. I worked as Vice-dean of Education and Student Affairs,

C. Project Members Information

#	Full Name	year grade	Strengths (special skills and capabilities)	Mobile number	Email
1		3rd	-		
2	Elsayed Mohamed Elsayed Elmandoh	3rd	- Good knowledge of python, computer vision, machine learning, NLP and Linux. - Basic knowledge of deep learning, IoT and Entrepreneurship. - Certificates of Python, Machine learning, Computer vision, IoT, Linux, Leadership and Entrepreneurship.	01067893405	elsayedelmandoh7@gmail.com
3	AbdElrahman Amer Hussien Amer Bishr	3rd	-good knowledge of programming(python, java,c++) Basic knowledge in c programming -good knowledge of Arduino certificates in Big data, Software testing, Ml, Python -good knowledge in fullstake software(frondend & backend)	01142462571	abduamer08@gmail.com

			good knowledge of Embedded Systems good knowledge of computer vision, machine learning and NLP -basic knowledge of electronics good knowledge of matlab -good knowledge in image processing and image analysis		
4	Norhan Farid Elsabahy Youssef Elnady		-good knowledge of programming(python, java,c++) -good knowledge of Arduino - certificates in IOT -good knowledge of Embedded Systems -good knowledge of microcontrollers and computer architecture -certificates in effective leadership and strategic planning - good knowledge of computer vision and machine learning -basic knowledge of electronics -good knowledge of matlab -good knowledge in image processing and image analysis	01010234311	norhanfarid82@gmail.com

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* Please note that the first name will be referred to as the main **CONTACT PERSON** for the whole group.

D. Project Description

Applicants shall provide a brief description of their project. This description should include the following **according to the distribution of scores**:

1. Overview
(i) Problem definition, (ii) approach and tools/techniques, (iii) overview of system modules (v) **references** and (iv) **possibility to make research paper**

(i) Problem Definition:
The project aims to address the need for sentiment analysis of public opinion related to military operations and politics using social media data. With the increasing influence of social media platforms, it has become crucial for the armed forces to gain insights into public sentiment to identify potential threats and understand the public's opinion on military operations and political matters. By classifying social media posts into two categories, Category not related to military operations but related to politics and Category related to both military operations and politics, the project will provide valuable information for strategic decision-making.

(ii) Approach and Tools/Techniques:
The project will utilize Natural Language Processing (NLP) techniques and machine learning algorithms to perform sentiment analysis on social media posts. NLP techniques will be employed to preprocess and extract relevant features from the textual data, Machine learning algorithms will be trained to classify the posts two Categories.

(iii) Overview of System Modules:
The project will consist of the following modules:
a. Data Collection: Collect a diverse dataset of social media posts related to military operations and politics.

b. Data Preprocessing: Clean and preprocess the collected data, handling noise, missing values, and standardizing the format.

c. Feature Extraction: Apply NLP techniques to extract relevant features from the textual data.

d. Model Training: Utilize machine learning algorithms to train a classification model for categorizing posts into Category 0 or Category 1.

e. Sentiment Analysis: Analyze the sentiment of posts to determine public opinion on military operations and politics.

f. Threat Identification: Identify potential threats or concerns expressed by the public through sentiment analysis.

g. Visualization and Reporting: Visualize the findings and generate comprehensive reports for decision-makers.

(iv) Possibility to Make Research Paper:
The project has the potential to contribute to the research field of sentiment analysis, particularly in the context of military operations and politics.

v) References:
[1] Using sentiment analysis to predict opinion inversion in Tweets of political communication. [link]

2. Impact
Why do you consider this project? What is its impact on community/market/end user/**sustainable development of Egypt 2030…?**

Community:
The proposed system will provide valuable insights into public sentiment related to military operations and politics. This information can be used to inform decision-making by policymakers, military leaders, and media outlets. By providing a more accurate understanding of public sentiment, the proposed system can contribute to greater transparency, accountability, and trust between the government and the public.

Market:
The proposed system can have a significant impact on the market by enabling businesses to identify potential threats and opportunities related to military operations and politics. For example, companies that manufacture defense-related products or provide services to the military can use the insights generated by the system to inform their strategic planning and marketing efforts.

End-users:
The proposed system can benefit end-users, such as military personnel and journalists, by providing them with timely and accurate information about public sentiment related to military operations and politics. This information can help them make informed decisions and avoid potential risks.

Sustainable Development Goals of Egypt 2030:
The proposed system can contribute to the sustainable development goals of Egypt 2030 by promoting greater transparency, accountability, and trust between the government and the public. By providing insights into public sentiment related to military operations and politics, the proposed system can help the government make more informed decisions that align with the goals of Egypt 2030.

3. Novelty and Features

Explain (i) novelty (ii) features, and (iii) related products, if any.

(i) Novelty:

The proposed sentiment analysis system has several novel features that distinguish it from existing systems. Firstly, the system will use natural language processing (NLP) and machine learning techniques to classify social media posts into two categories, 0 or 1, based on whether they are related to military operations and politics or not, respectively. This approach is more accurate and efficient than existing systems that rely on keyword-based classification. Secondly, the system will analyze the sentiment of the social media posts to identify potential threats and public opinion related to military operations and politics. This feature is particularly novel, as it enables the system to provide more nuanced insights into public sentiment than existing systems that focus only on classification.

(ii) Features:

Data collection module: This module will collect social media posts related to military operations and politics from various sources, such as Twitter and Facebook.

Data preprocessing module: This module will preprocess the collected data and extract relevant features using NLP techniques such as tokenization, stemming, and stop-word removal.

Classification module: This module will use machine learning algorithms to classify the social media posts into two categories, 0 or 1, based on whether they are related to military operations and politics or not, respectively.

Sentiment analysis module: This module will analyze the sentiment of the classified social media posts to identify potential threats and public opinion related to military operations and politics.

User interface: The system will have a user-friendly interface that will enable users to access and visualize the insights generated by the system.

(iii) Related products:

There are several existing products and systems that perform sentiment analysis on social media data. However, the proposed sentiment analysis system is unique in its focus on military operations and politics. Existing systems may not be able to accurately classify and analyze social media posts related to military operations and politics, as they often use keyword-based classification, which may not capture the nuances of public sentiment. Furthermore, the proposed system will use a combination of NLP and machine learning techniques, which are more accurate and efficient than existing systems. Overall, the proposed sentiment analysis system is a novel and innovative approach to analyzing public sentiment related to military operations and politics.

4. Deliverables

What is the project final outcome (HW device, SW package, simulation ...)? Do you foresee any potential marketing or customers?

Final Outcome:

The final outcome of the proposed project is a software package that can analyze public sentiment related to military operations and politics. The software package will include various modules, such as data collection, data preprocessing, classification, and sentiment analysis. The system will use natural language processing (NLP) and machine learning techniques to analyze social media posts related to military operations and politics and classify them into two categories, 0 or 1, based on whether they are related to military operations and politics or not, respectively. The system will also analyze the sentiment of the classified social media posts to identify potential threats and public opinion related to military operations and politics. The final outcome of the proposed project will be a user-friendly software package that can provide valuable insights into public sentiment related to military operations and politics.

Potential Marketing and Customers:

- **Government and military organizations:** The proposed system can be used by government and military organizations to analyze public sentiment related to military operations and politics. This information can be used to inform decision-making and improve communication with the public.
- **Private companies:** Private companies that manufacture defense-related products or provide services to the military can use the insights generated by the system to inform their strategic planning and marketing efforts.

5. Role of the Industrial Partner (if any)

What is the type of support to be provided by the industrial partner (technical, financial, access…)?

6. Estimated Expenses

An estimate of the itemized costs: Equipment & tools; printing

Item	Type (Hardware/ Software/ Other)	Specifications (brief description)	Justification (why is this item needed?)	Vendor/ Source	Unit Cost	No. of Items	Total Cost of Items
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

Total Cost of project	