

[Open Peer Review on Qeios](#)

# Prospective Role of Chat GPT in the Military: According to ChatGPT

Som Biswas<sup>1</sup>

<sup>1</sup> Le Bonheur Children's Hospital

**Funding:** No specific funding was received for this work.

**Potential competing interests:** No potential competing interests to declare.

## Abstract

ChatGPT, a large language model developed by OpenAI, has the potential to play a role in a wide range of military applications such as automated target recognition, military robotics, material development systems testing in simulation, military medicine, battle space autonomy, intelligence analysis, record tracking, military logistics, information warfare, driverless vehicles, surveillance, lethal autonomous weapons systems, battlefield environmental support, virtual and augmented reality modeling and simulations, free air combat modeling, missile guidance, communications, and network security, data fusion for situational awareness, swarm intelligence for swarm combat, autonomous flight control of UAVs, AI satellites and software-defined satellites, wearable systems for individual personnel, management of large amounts of military data and counter-AI operations.

The author states that these claims have been made by chatGPT itself and the actual possibilities currently are limited. This article explores mostly the future applications of chatGPT as its database becomes bigger and analytical skills evolve over time.

## Highlights:

ChatGPT can be used in a variety of ways to support military operations and training, including:

- Assisting in the creation of debrief reports and after-action summaries by generating text and summarizing data.
- Generating realistic and diverse dialogue options for characters in military simulations, to improve the realism and challenge of the training experience.
- Generating a wide range of possible scenarios for training, including those that may be difficult or costly to replicate in a live environment.

**Keywords:** ChatGPT, Artificial Intelligence, AI, Military, Combat, Battlefield, Warfare.

## Background

ChatGPT is a language generation model that can be used for a variety of tasks, including natural language processing, text generation, and language translation. In a military context, ChatGPT could be used for tasks such as creating training materials, translating communications between different languages, and generating reports and summaries of intelligence information. However, it is important to note that ChatGPT is a general-purpose language model and its specific applications in the military would depend on how it is trained and configured. The author states that these claims have been made by chatGPT itself and the actual possibilities currently are limited. This article explores mostly the future applications of chatGPT as its database becomes bigger and analytical skills evolve over time.

### A list of potential uses of ChatGPT in a military context are:

1. Generating training materials and summaries of existing materials to save time and resources.
2. Intelligence analysis.
3. Language translation.
4. Automated Target Recognition
5. Military Robotics
6. Testing of Material Development Systems in Simulation
7. Military Medicine
8. Battle Space Autonomy
9. Intelligence Analysis
10. Record Tracking
11. Military Logistics
12. Information Warfare
13. Driverless Vehicles
14. Surveillance
15. Lethal Autonomous Weapons Systems
16. Battlefield Environmental Support
17. Virtual and Augmented Reality for Modeling, Simulations, and Combat Training
18. Free Air Combat Dynamics
19. Neural Networks for Missile Guidance
20. Communications and Network Security
21. Data Fusion for Situational Awareness in Anti-Submarine Warfare
22. Cyber Security and Cryptography
23. Swarm Intelligence for 'Swarm Combat'
24. Autonomous Flight Control of Long-Range Unmanned Aerial Systems
25. AI Satellites and Software-Defined Satellites

26. Wearable Systems for Individual Personnel
27. Management of Massive Amounts of Military Data
28. Countering or Subverting Adversary's AI Systems
29. Information Fusion
30. Situation Awareness
31. Path Planning
32. Man-Machine Interface.
33. Generating reports and after-action summaries, debrief reports, incident reports and other types of documentation.
34. Generating responses for military simulations, for example for training in negotiation, n, or for military exercises.

### Generation of training materials

One example of how ChatGPT could be used in a military context is in the generation of training materials. The model could be trained on a large corpus of military-specific text, such as field manuals and training guides, and then used to generate new training materials or summaries of existing materials. This could save time and resources for training and education departments within the military <sup>[1]</sup>.

### Language translation for the military

Additionally, ChatGPT could be used for language translation for the military, for example for translating communications between different languages to facilitate better communication and understanding between different military units or between the military and local populations in areas of operation.

In all cases, the specific application of ChatGPT in the military would depend on how it is trained and configured. The more specific the data and task, the better the model will be able to perform in that specific scenario.

### Terrain Analysis

ChatGPT can be trained to perform terrain analysis for the military by using natural language processing techniques to extract relevant information from text data. Here are a few examples of how ChatGPT could be used for terrain analysis:

1. Extracting topographic information: ChatGPT can be trained to analyze satellite imagery or other types of data to extract information such as elevation, slope, and aspect. This could be used to create detailed topographic maps or to identify areas of rugged or difficult terrain.
2. Identifying features: ChatGPT can be trained to analyze imagery and other data to identify features such as roads, buildings, and bodies of water. This could be used to create detailed maps or to identify potential obstacles or chokepoints.
3. Analyzing vegetation: ChatGPT can be trained to analyze imagery and other data to identify different types of vegetation. This could be used to identify areas of dense vegetation that could be used for cover or concealment, or to

identify areas of sparse vegetation that could be used for observation or surveillance.

4. Analyzing climate: ChatGPT can be trained to extract information from meteorological data and weather forecasts, to identify patterns and trends, such as temperature, precipitation, wind, and solar radiation. This could be used to predict weather conditions and to plan military operations accordingly.
5. Analyzing historical data: ChatGPT can be trained to analyze historical data such as historical maps, photos, and other types of information. This could be used to identify changes in terrain over time or to identify patterns or trends in historical data that could be useful for planning military operations.

Please note that this list is not exhaustive, and ChatGPT could be used for other types of terrain analysis as well, depending on how it is trained and configured. Additionally, the accuracy of the analysis performed by ChatGPT will depend on the quality and quantity of the data it was trained on <sup>[2]</sup>.

### Automated target recognition

ChatGPT can play a role in automated target recognition by using natural language processing (NLP) techniques to extract relevant information from text data and generate insights. Here are a few examples of how ChatGPT can be used to support automated target recognition:

1. Text data extraction: ChatGPT can be trained on data from sensor logs, satellite imagery, and surveillance footage. Once trained, it can be used to extract information about potential targets such as their size, shape, location, and movement. For example, ChatGPT can be trained to extract information about the size and location of a building from satellite imagery, which can be used to train an automated target recognition algorithm.
2. Image captioning: ChatGPT can be trained to generate captions for images, and this could be used to describe the features of a potential target, such as its size, shape, and location. For example, ChatGPT can be trained to generate captions for images of tanks, describing their features like size, shape, color, and location.
3. Predictive analysis: ChatGPT can be trained to analyze historical data and other information to identify patterns or trends, which could be used to predict the location or behavior of potential targets. For example, ChatGPT can be trained on historical sensor data and other information to identify patterns in the movement of enemy vehicles, which could be used to predict their future movements and plan accordingly.
4. Summarization: ChatGPT can be trained to summarize large amounts of sensor data, surveillance footage, and other information, which could be used to extract key information and reduce the time and effort required to manually review the data. For example, ChatGPT can be trained to summarize a large number of sensor logs, identifying key information about potential targets and reducing the time required to manually review the data.
5. Natural Language Understanding: ChatGPT can be trained to understand natural language commands and queries and respond accordingly. This could be used to train automated target recognition algorithms to respond to voice commands or to perform certain tasks such as tracking a target. For example, the model can be trained to understand the command "Track the target moving at 60 mph heading south" and the model will respond with the location of the target moving at that speed in the given direction.

Please note that the examples above are perspective and do not reflect the current state of technology<sup>[3]</sup>.

## Military Robotics

ChatGPT can play a role in military robotics by using natural language processing (NLP) techniques to extract relevant information from text data and generate insights. Here are a few examples of how ChatGPT can be used to support military robotics:

1. **Speech recognition:** ChatGPT can be trained on a large dataset of speech data to recognize and understand spoken commands. This can be used to control military robots and drones, allowing them to respond to voice commands.
2. **Natural Language Understanding:** ChatGPT can be trained to understand natural language commands and queries and respond accordingly. This could be used to train military robots and drones to respond to voice commands or to perform certain tasks such as navigation, tracking, and surveillance.
3. **Predictive maintenance:** ChatGPT can be trained to analyze sensor data from military robots and drones to predict when maintenance is required. This can help to improve the efficiency of military robotics and reduce the risk of equipment failure.
4. **Summarization:** ChatGPT can be trained to summarize large amounts of sensor data, surveillance footage, and other information, which could be used to extract key information and reduce the time and effort required to manually review the data.
5. **Situation awareness:** ChatGPT can be trained to analyze sensor data, surveillance footage, and other information to provide situational awareness, which can help to improve the decision-making of military robots and drones.

It's worth noting that the use of ChatGPT for military robotics is still in the research phase and not yet fully developed and implemented. Additionally, the accuracy of the analysis performed by ChatGPT will depend on the quality and quantity of the data it was trained on<sup>[4]</sup>.

## Testing of material development systems in simulation

ChatGPT can be used in the testing of material development systems in simulation by using natural language processing (NLP) techniques to extract relevant information from text data and generate insights. Here are a few examples of how ChatGPT can be used to support the testing of material development systems in simulation:

1. **Data analysis:** ChatGPT can be trained to analyze data from simulations of material development systems, such as mechanical properties, thermal properties, and chemical properties. This can be used to extract insights into how the materials are performing and how they can be improved.
2. **Predictive modeling:** ChatGPT can be trained on data from simulations of material development systems to predict how the materials will perform under different conditions. This can help to optimize the design of the materials and improve their performance.
3. **Summarization:** ChatGPT can be trained to summarize large amounts of data from simulations of material

development systems, which can be used to extract key insights and reduce the time and effort required to manually review the data.

4. Natural Language Generation: ChatGPT can be trained to generate natural language descriptions of the simulations of material development systems, which can be used to communicate the results of the simulations to engineers and other stakeholders.
5. Anomaly detection: ChatGPT can be trained to detect anomalies in the data from simulations of material development systems, which can be used to identify problems with the materials and improve the design [\[5\]](#).

## Role in Military Medicine

ChatGPT can play a role in military medicine by using natural language processing (NLP) techniques to extract relevant information from text data and generate insights. Here are a few examples of how ChatGPT can be used to support military medicine:

1. Medical diagnosis: ChatGPT can be trained to analyze medical data and make diagnoses, such as identifying illnesses, injuries, and other health conditions in military personnel.
2. Medical triage: ChatGPT can be trained to analyze medical data and prioritize treatment for injured military personnel based on the severity of their condition. This can help to ensure that the most critically injured receive treatment first.
3. Medical training: ChatGPT can be trained to generate detailed instructions and training materials for military medical personnel. This can be used to improve the quality of care provided to military personnel.
4. Medical research: ChatGPT can be trained to analyze large amounts of medical data, such as electronic health records, to identify patterns and generate insights. This can be used to support medical research and improve the quality of care provided to military personnel.
5. Medical communication: ChatGPT can be trained to generate natural language explanations of medical conditions, procedures, and treatments. This can be used to improve communication between medical personnel and military personnel, helping to ensure that they understand their condition and treatment.

## Battle Spaces Autonomy

Here are a few examples of how ChatGPT can be used to support battle space autonomy:

1. Command and control: ChatGPT can be trained to analyze data from sensors and other sources to generate real-time situational awareness for military commanders. This can be used to improve decision-making and command and control in battle space.
2. Planning and coordination: ChatGPT can be trained to analyze data from sensors and other sources to generate plans and coordinate the actions of autonomous systems in battle space. This can be used to improve the efficiency and effectiveness of military operations.
3. Intelligence, surveillance, and reconnaissance: ChatGPT can be trained to analyze data from sensors and other sources to generate intelligence, surveillance, and reconnaissance information. This can be used to improve situational

awareness and decision-making in battle space.

4. Target identification and tracking: ChatGPT can be trained to analyze data from sensors and other sources to identify and track targets in battle space. This can be used to improve the accuracy and effectiveness of autonomous systems in battle space.
5. Risk assessment: ChatGPT can be trained to analyze data from sensors and other sources to assess the risk of different actions in battle space. This can be used to make decisions about how to operate safely and effectively in battle space.

## Intelligence analysis

Another example is in the field of natural language processing for intelligence analysis. ChatGPT could be trained on a dataset of intelligence reports and other relevant text and then used to automatically generate summaries of the information contained in the reports or to identify key pieces of information that may not be immediately obvious.

1. Text summarization: ChatGPT can be trained to analyze large amounts of text data, such as news articles, social media posts, or government documents, and summarize the information concisely and coherently. This can be used to quickly identify key information and trends in the data.
2. Named entity recognition: ChatGPT can be trained to analyze text data and identify entities such as people, organizations, and locations. This can be used to create a more detailed understanding of the data and identify key players and locations.
3. Sentiment analysis: ChatGPT can be trained to analyze text data and identify the sentiment expressed in the data. This can be used to identify positive, negative, or neutral sentiments in the data and help to understand how people feel about a particular topic.
4. Language translation: ChatGPT can be trained to translate text data from one language to another. This can be used to analyze text data in different languages and improve understanding of global events.
5. Predictive analysis: ChatGPT can be trained to analyze text data and make predictions about future events. This can be used to identify potential threats and opportunities and inform decision-making.

## Record Tracking

Here are a few examples of how ChatGPT can be used to support record tracking:

1. Document classification: ChatGPT can be trained to analyze text data, such as documents, and classify them into different categories. This can be used to organize and track documents more efficiently.
2. Data extraction: ChatGPT can be trained to extract specific information from text data, such as names, dates, or locations. This can be used to create a more detailed understanding of the data and improve record tracking.
3. Search and retrieval: ChatGPT can be trained to understand natural language queries and search through text data to retrieve relevant information. This can be used to quickly find specific records or information.
4. Data validation: ChatGPT can be trained to analyze text data and validate the accuracy and completeness of the

information. This can be used to ensure that records are accurate and up-to-date.

5. Compliance: ChatGPT can be trained to analyze text data and ensure compliance with regulations and policies. This can be used to ensure that records are stored and handled by legal requirements.

## Military Logistics

1. Inventory management: ChatGPT can be trained to analyze text data, such as invoices or shipping documents, and extract information on the quantity, type, and location of inventory. This can be used to track inventory levels and ensure that supplies are available when needed.
2. Transportation optimization: ChatGPT can be trained to analyze text data, such as shipping manifests or flight plans, and extract information on transportation routes, schedules, and costs. This can be used to optimize transportation routes and schedules to reduce costs and improve efficiency.
3. Maintenance schedule: ChatGPT can be trained to analyze text data, such as maintenance logs or equipment specifications, and extract information on the maintenance schedule for equipment. This can be used to schedule maintenance in advance and ensure that equipment is ready for use when needed.
4. Supply chain management: ChatGPT can be trained to analyze text data, such as purchase orders or supplier contracts, and extract information on the supply chain. This can be used to identify potential bottlenecks or delays in the supply chain and take corrective action.
5. Risk management: ChatGPT can be trained to analyze text data, such as weather reports or security alerts, and extract information on potential risks. This can be used to plan and prepare for potential disruptions to logistics operations.

## Information Warfare

1. Social media monitoring: ChatGPT can be trained to monitor social media platforms and extract information on public opinion, sentiment, and trending topics. For example, ChatGPT can be trained to monitor Twitter for mentions of a specific political leader or event, and generate a report on the sentiment and frequency of those mentions.
2. Propaganda generation: ChatGPT can be trained to generate text data, such as news articles, social media posts, or speeches, that align with a specific agenda or message. For example, ChatGPT can be trained to generate articles or posts that present a specific political leader or policy in a positive light and distribute them on social media platforms.
3. Cyber attacks: ChatGPT can be used to automate the generation of phishing emails, malicious links, or other forms of social engineering attacks. For example, ChatGPT can be trained to generate emails that appear to come from a legitimate source, such as a bank or government agency, and trick recipients into providing sensitive information or clicking on a malicious link.
4. Strategic communication: ChatGPT can be used to generate text data, such as press releases, speeches, or statements, that align with a specific agenda or message. For example, ChatGPT can be trained to generate a press release that presents a specific military operation in a positive light and distribute it to media outlets.
5. Deepfake generation: ChatGPT can be trained to generate realistic deep fake videos, which can be used to



impersonate political figures or military leaders, spread false information, or spread disinformation. For example, ChatGPT can be used to create a video that appears to show a political leader making a statement they did not make, and distributing it on social media platforms.

## Driverless Military Vehicles

Here are a few examples of how ChatGPT can be used to support driverless vehicles:

1. **Voice commands:** ChatGPT can be trained to understand and respond to voice commands, such as "take me to the grocery store" or "change the temperature to 72 degrees." This can be used to control the vehicle's navigation, climate control, and other features.
2. **Text-to-speech:** ChatGPT can be used to generate natural-sounding speech for the vehicle's interface, such as providing turn-by-turn navigation instructions or responding to voice commands.
3. **Natural Language Understanding:** ChatGPT can be trained to understand natural language inputs and translate them into actionable commands. This allows driverless vehicles to understand complex human inputs.
4. **Chatbot Interface:** ChatGPT can be used as a chatbot interface in driverless vehicles, to answer questions, provide information or recommendations, or perform other tasks.
5. **Safety checks:** ChatGPT can be trained to understand safety-related inputs, such as "are there any obstacles in the way?" or "is it safe to proceed?" and provide appropriate responses.

It's worth noting that the use of ChatGPT for driverless vehicles will depend on the quality and quantity of the data it was trained on, and the accuracy of the analysis performed by ChatGPT will depend on the quality and quantity of the data it was trained on. Additionally, the use of ChatGPT in driverless vehicles will also raise ethical concerns such as safety, reliability, and security.

## Surveillance

ChatGPT can be used in various aspects of surveillance, such as image and video analysis, natural language processing, and speech recognition. Here are a few examples of how ChatGPT can be used in surveillance:

1. **Image and video analysis:** ChatGPT can be trained to analyze images and videos to detect and identify objects, people, or other features of interest. For example, ChatGPT can be used to automatically detect and track people or vehicles in surveillance footage.
2. **Speech recognition:** ChatGPT can be used to transcribe and translate speech from surveillance footage, such as conversations or radio transmissions. This can be used to extract valuable information or detect suspicious activity.
3. **Natural Language Processing:** ChatGPT can be used to analyze text data, such as social media posts or chat messages, to detect patterns or keywords that indicate suspicious activity.
4. **Face recognition:** ChatGPT can be trained to detect and recognize faces in images and videos, which can be used to identify individuals in surveillance footage or match them to a database of known individuals.

5. Anomaly detection: ChatGPT can be trained to detect unusual or anomalous behavior in images and videos, such as a person loitering in a restricted area or an object left behind in a public space.

It's worth noting that the use of ChatGPT for surveillance raises ethical concerns such as privacy, security, and civil liberties.

### Lethal Autonomous Weapons System

ChatGPT can potentially play a role in the development and operation of lethal autonomous weapons systems (LAWS) by using natural language processing (NLP) techniques to understand and respond to human inputs and make decisions. However, the use of ChatGPT in LAWS raises significant ethical concerns and is a highly controversial topic.

Here are a few examples of how ChatGPT could be used in LAWS:

1. Target recognition: ChatGPT can be trained to analyze images and videos to detect and identify targets, such as enemy vehicles or buildings. This could be used to guide the actions of an autonomous weapon.
2. Natural Language Understanding: ChatGPT can be trained to understand natural language inputs and translate them into actionable commands. This could be used to control the actions of an autonomous weapon, such as "engage the enemy tank" or "withdraw from the battlefield."
3. Decision-making: ChatGPT can be used to process and analyze data from various sources, such as sensor data, and make decisions about the actions of an autonomous weapon. For example, it could decide whether to engage a target or not based on a set of rules.
4. Chatbot Interface: ChatGPT can be used as a chatbot interface in LAWS, to answer questions, provide information or recommendations, or perform other tasks.

It's important to note that the use of ChatGPT in LAWS is a highly controversial topic and raises ethical concerns such as accountability, safety, and the possibility of misuse.

### Battlefield Environmental Support

ChatGPT can potentially play a role in providing battlefield environmental support by using natural language processing (NLP) techniques to understand and respond to human inputs and make decisions based on the environment. Here are a few examples of how ChatGPT could be used in battlefield environmental support:

1. Weather forecasting: ChatGPT can be trained to analyze weather data and provide forecasts for specific locations. This information could be used to plan military operations or protect troops from adverse weather conditions.
2. Terrain analysis: ChatGPT can be trained to analyze images and videos of terrain to identify features such as roads, buildings, and natural obstacles. This information could be used to plan routes of advance or to identify potential hiding spots for the enemy.
3. Natural Language Processing: ChatGPT can be used to understand natural language inputs and translate them into

actionable commands. This could be used to control the actions of autonomous systems, such as drones, which can be used for reconnaissance, surveillance, or environmental monitoring.

4. Decision-making: ChatGPT can be used to process and analyze data from various sources, such as sensor data, and make decisions about the actions of autonomous systems in the battlefield environment. For example, it could decide whether to engage a target or not based on a set of rules.

Some of these examples are discussed in detail above.

## Virtual and augmented reality to modeling, simulations, and actual combat training

ChatGPT can be used in the application of virtual and augmented reality (VR/AR) for modeling, simulations, and actual combat training in a few ways:

1. Scenario generation: ChatGPT can be trained to generate realistic scenarios for training exercises, such as simulated battles or disaster response scenarios. This can be used to create more realistic and varied training experiences for military personnel.
2. Natural Language Processing: ChatGPT can be used to understand natural language inputs and translate them into commands for VR/AR systems. This can be used to control the actions of virtual characters or to manipulate the virtual environment.
3. Dialogue generation: ChatGPT can be used to generate realistic dialogue for virtual characters in training simulations. This can be used to create more engaging and realistic training experiences.
4. Decision-making: ChatGPT can be used to process and analyze data from VR/AR systems, such as sensor data, and make decisions about the actions of virtual characters in simulated environments. This can be used to create more challenging and dynamic training experiences.
5. Virtual assistant: ChatGPT can be used as a virtual assistant for military personnel in VR/AR training simulations, providing guidance and answering questions in real time.

## Free Air Combat

ChatGPT can be used to model the dynamics of offense and defense in free-air combat in a few ways:

1. Scenario generation: ChatGPT can be trained to generate realistic scenarios for air combat simulations, such as simulated dogfight scenarios. This can be used to create more realistic and varied training experiences for military pilots.
2. Decision-making: ChatGPT can be used to process and analyze data from air combat simulations, such as sensor data, and make decisions about the actions of simulated aircraft in the simulation. This can be used to create more challenging and dynamic training experiences.
3. Tactical analysis: ChatGPT can be used to analyze the tactics used by simulated aircraft in the simulation, and make recommendations for more effective tactics based on the data it has processed.

4. Behavior prediction: ChatGPT can be trained on historical data to predict the behavior of enemy aircraft in real-world scenarios and help make decisions on how to engage them.
5. Virtual Assistant: ChatGPT can be used as a virtual assistant for military pilots in air combat simulations, providing guidance and answering questions in real time.

### Missile guidance

ChatGPT can be used in conjunction with neural networks to enable greater autonomy in cruise missiles for control and targeting in a few ways:

1. Scenario generation: ChatGPT can be trained to generate realistic scenarios for missile guidance simulations, such as simulated flight paths, and terrain. This can be used to create more realistic and varied training experiences for missile guidance systems.
2. Decision-making: ChatGPT can be used to process and analyze data from missile guidance simulations, such as sensor data, and make decisions about the actions of simulated missiles in the simulation. This can be used to create more challenging and dynamic training experiences for missile guidance systems.
3. Tactical analysis: ChatGPT can be used to analyze the tactics used by simulated missiles in the simulation, and make recommendations for more effective tactics based on the data it has processed.
4. Behaviour prediction: ChatGPT can be trained on historical data to predict the behavior of enemy missiles in real-world scenarios and help make decisions on how to engage them.
5. Virtual Assistant: ChatGPT can be used as a virtual assistant for missile guidance systems, providing guidance and answering questions in real time.
6. Autonomous control: ChatGPT can be integrated into the missile guidance system to provide autonomous decision-making and control capabilities, without the need for human intervention.

### Battlefield communications and secure networks against jamming

ChatGPT can be used to improve communications and secure networks against jamming in several ways:

1. Message generation: ChatGPT can be trained to generate messages that are resistant to jamming by using natural language processing techniques. This can help improve the reliability of communications in jamming environments.
2. Network security: ChatGPT can be used to analyze network traffic and identify potential jamming attacks. This can be used to improve the security of networks against jamming attacks.
3. Keyphrase generation: ChatGPT can be used to generate key phrases that are resistant to jamming. This can be used to improve the security of communications in jamming environments.
4. Encryption: ChatGPT can be used to generate encryption keys that are resistant to jamming. This can be used to improve the security of communications in jamming environments.
5. Virtual Assistant: ChatGPT can be used as a virtual assistant for network and communication systems, providing guidance and answering questions in real time.

6. Autonomous control: ChatGPT can be integrated into communication systems to provide autonomous decision-making and control capabilities, without the need for human intervention.

## Data Fusion

ChatGPT can be used to develop new techniques for data fusion in several ways:

1. Data integration: ChatGPT can be trained on large amounts of sensor data from various sources, such as sonar, radar, and cameras, to learn how to integrate this data and extract meaningful information. This can be used to improve situational awareness in anti-submarine warfare.
2. Automatic Pattern Recognition: ChatGPT can be used to automatically identify patterns in sensor data, such as identifying the presence of submarines. This can be used to improve situational awareness in anti-submarine warfare.
3. Sensor Fusion: ChatGPT can be used to combine data from different sensors to create a more complete picture of the environment. This can be used to improve situational awareness in anti-submarine warfare.
4. Decision Support: ChatGPT can be used to provide decision-making support to operators, by analyzing sensor data and providing recommendations on how to respond to detected threats.
5. Natural Language Processing: ChatGPT can be used to analyze natural language data, such as communication between operators, to extract information relevant to anti-submarine warfare.

## Cyber security and cryptography, including advanced steganography

ChatGPT can be used in several ways to enhance cyber security and cryptography:

1. Natural Language Processing: ChatGPT can be used to analyze natural language data, such as email and text messages, to identify and extract information relevant to cyber security, such as phishing attempts or malware.
2. Anomaly detection: ChatGPT can be used to analyze network traffic, log data, and other information to identify anomalies that may indicate a cyber attack.
3. Password cracking: ChatGPT can be used to generate and test potential passwords and to crack encrypted password databases.
4. Encryption: ChatGPT can be used to generate secure encryption keys, by analyzing data and identifying patterns in the data that can be used to create secure keys.
5. Advanced steganography: ChatGPT can be used to develop new techniques for steganography, which is the practice of hiding data in other data, such as hiding a message in an image.

## Swarm intelligence aimed at enabling 'swarm combat'

ChatGPT can potentially be used to develop new algorithms and architectures for swarm intelligence aimed at enabling "swarm combat" in the following ways:

1. Creating models of swarm behavior: ChatGPT can be trained on data related to the behavior of swarms of animals or

insects, such as flocks of birds or schools of fish, to create models that can be applied to the behavior of groups of unmanned vehicles.

2. Natural Language Processing: ChatGPT can be used to analyze natural language data, such as reports and articles, to extract information about swarm intelligence and its potential applications in military scenarios.
3. Generating control algorithms: ChatGPT can be used to generate control algorithms for groups of unmanned vehicles, based on information about swarm behavior and the requirements of a specific military scenario.
4. Optimizing swarm behavior: ChatGPT can be used to optimize the behavior of a swarm of unmanned vehicles, by analyzing data from simulations and real-world scenarios and using that data to improve the performance of the swarm.

### Unmanned aerial systems (UAVs)

ChatGPT can potentially be used to develop new techniques to enable autonomous flight control of new-energy long-range unmanned aerial systems (UAVs) in the following ways:

1. Predictive modeling: ChatGPT can be trained on data related to the performance of UAVs, such as flight data, sensor readings, and weather conditions, to create predictive models of UAV behavior. These models can be used to optimize the flight control of UAVs, enabling them to fly more efficiently and safely.
2. Natural Language Processing: ChatGPT can be used to analyze natural language data, such as technical reports and articles, to extract information about new techniques for autonomous flight control of UAVs.
3. Generating control algorithms: ChatGPT can be used to generate control algorithms for UAVs based on the predictive models created and the specific requirements of a UAV mission.
4. Optimizing UAV performance: ChatGPT can be used to analyze data from simulations and real-world scenarios to optimize the performance of UAVs, such as increasing the range and flight time of UAVs.

### AI satellites and software-defined satellites for the military

ChatGPT can potentially be used to develop AI and software-defined satellites for military use in the following ways:

1. Predictive modeling: ChatGPT can be trained on data related to the performance of satellites, such as sensor readings, telemetry data, and weather conditions, to create predictive models of satellite behavior. These models can be used to optimize the performance of satellites, enabling them to operate more efficiently and effectively.
2. Natural Language Processing: ChatGPT can be used to analyze natural language data, such as technical reports and articles, to extract information about new techniques for AI and software-defined satellites.
3. Generating control algorithms: ChatGPT can be used to generate control algorithms for satellites based on the predictive models created and the specific requirements of a satellite mission.
4. Optimizing satellite performance: ChatGPT can be used to analyze data from simulations and real-world scenarios to optimize the performance of satellites, such as increasing the lifespan of a satellite or its ability to gather specific information.

5. Cybersecurity: ChatGPT can be used to analyze data and identify vulnerabilities in satellite systems, providing insights into how to protect these systems from cyber attacks.

### Wearable systems to enhance situational awareness and decision-making on the battlefield

It is possible to imagine the use of ChatGPT in developing AI-powered wearable systems for individual personnel in the military. These systems could be designed to enhance situational awareness and decision-making on the battlefield by using the natural language processing (NLP) capabilities of ChatGPT to interpret data from various sensors and devices, such as cameras, microphones, and GPS. For example, ChatGPT could be used to process and analyze audio and video data in real time to identify potential threats and provide recommendations to the wearer. Additionally, ChatGPT could be used to generate natural language commands for controlling unmanned systems, such as drones, or for communicating with other members of the team.

### Managing Military Data

ChatGPT can be used to manage massive amounts of military data, including through parallel processing, in support of joint operations. ChatGPT's ability to process and analyze large amounts of data in real time can help military leaders make data-driven decisions. For example, ChatGPT can be used to process and analyze sensor data from unmanned systems, such as drones or satellite imagery, to identify potential threats or provide intelligence on enemy positions. Additionally, ChatGPT can be used to process and analyze communication data, such as radio or text messages, to identify patterns or identify important information that would otherwise be difficult to discern. ChatGPT can also be used for natural language processing of unstructured data such as reports, social media, and other sources of information to extract insights that can be used to support military operations.

### Use of chat GPT capabilities and techniques to counter or subvert an adversary's AI systems via manipulation of data and/or exploitation of hardware vulnerabilities

ChatGPT can be used to counter or subvert an adversary's AI systems via the manipulation of data and/or exploitation of hardware vulnerabilities. One way ChatGPT can be used for this is through the creation of "adversarial examples" or "poisoned data." This involves creating data samples that are specifically designed to fool an AI system into making incorrect decisions. These samples could be used to train an adversary's AI system to make mistakes, or they could be used to manipulate the AI system's decision-making process during runtime. Another way ChatGPT can be used to subvert AI systems is through the identification and exploitation of hardware vulnerabilities. ChatGPT can be used to analyze an AI system's hardware and software, looking for weaknesses that could be exploited to take control of the system or disrupt its operation. Additionally, chat GPT can be used to create and test new algorithms, architectures, and software that can be used to counter or subvert AI systems. It is important to note that such usage must comply with international laws and ethical considerations.

## Path Planning

Chat GPT can be used in path planning in the military by generating and analyzing multiple possible routes for troops or vehicles to take in a given area. This could include analyzing terrain data, identifying potential obstacles and hazards, and taking into account other factors such as enemy positions and logistics. Additionally, GPT can be used to simulate and test different path-planning strategies in a virtual environment to determine their effectiveness before they are implemented in real-world operations. This can help military planners make more informed decisions and improve the efficiency and safety of military operations.

## Situation Awareness

Another potential use of ChatGPT in the military could be in the area of situation awareness. ChatGPT can be used to analyze and process data from various sources such as sensors, unmanned systems, and other sources to provide military personnel with real-time information about their environment, including the location and movements of friendly and enemy forces, as well as weather and other environmental factors that may affect operations. Additionally, ChatGPT can be used to improve the accuracy and timeliness of information by integrating and analyzing data from multiple sources to provide a more complete picture of the battlefield. This can help military personnel make better decisions, improve coordination and communication, and ultimately increase their chances of success in operations.

## Man-Machine Interface

It is possible that ChatGPT could be used to develop more advanced and intuitive interfaces for soldiers to interact with military equipment, such as drones or other vehicles. This could include natural language input and output, as well as advanced voice and gesture recognition. Additionally, ChatGPT could also potentially be used to improve decision-making and situational awareness for soldiers by analyzing data from multiple sources and providing real-time recommendations. However, it is important to note that these are potential uses and there is no concrete evidence of chat-up being used in such a way.

## Generating debrief reports and after-action summaries

ChatGPT can be used to assist in the creation of debrief reports and after-action summaries for military operations by generating text based on input prompts. This can save time and resources by automating the writing process and providing a starting point for human editors to review and revise. Additionally, ChatGPT can be used to summarize large amounts of data and information, such as sensor data or intelligence reports, to provide a condensed overview of key events and insights.

## Generating responses for military simulations

ChatGPT can be used to generate responses for military simulations by providing realistic and diverse dialogue options for



simulated characters. This can improve the realism of the simulation and make it more challenging for trainees to respond to unexpected situations. Additionally, ChatGPT can be used to generate a wide range of possible scenarios, including those that may be difficult or costly to replicate in a live training environment. This can enhance the overall training experience and prepare trainees for a variety of potential real-world scenarios.

## Disadvantages of using chat GPT in the military

While ChatGPT and other language generation models can be useful in a military context, there are also some potential disadvantages to using them. Here are a few:

1. **Lack of context:** ChatGPT is a general-purpose language model and may not have the ability to fully understand the context of a specific military task or situation. This could lead to the generation of inaccurate or inappropriate responses.
2. **Bias:** ChatGPT is trained on a dataset of text, and if the data used to train the model contains bias, the model will also be biased. This could lead to issues such as generating discriminatory or offensive responses.
3. **Security concerns:** ChatGPT is a powerful language generation tool, and if it falls into the wrong hands, it could be used to generate convincing phishing emails, propaganda, or other malicious intent.
4. **Limited autonomy:** ChatGPT is not capable of independent reasoning, it can only generate text based on the input provided, and the quality of the generated text will be limited by the quality of the input.
5. **Dependence on data:** ChatGPT's performance is closely tied to the quality and quantity of the data it was trained on. If the model is not trained on a diverse and representative dataset, it may not perform well on certain tasks or with certain types of input.
6. **Ethical concerns:** Generating text that can be used to mislead or deceive people, or that can be used to manipulate public opinion. It is explained in the next section below.

It is important to keep these disadvantages in mind when considering the use of ChatGPT or other language generation models in a military context and to carefully evaluate the potential risks and benefits of using the technology.

## Ethical concerns of using chat GPT in the military

There are several ethical concerns associated with using ChatGPT and other language generation models in a military context. Here are a few examples:

1. **Deception and misinformation:** ChatGPT can be used to generate convincing and sophisticated text, which could be used to deceive or mislead people, including adversaries, allies, or the general public. This could lead to issues such as spreading false information or propaganda.
2. **Manipulation of public opinion:** ChatGPT can be used to generate text that is designed to influence public opinion, which could be used to shape political or military objectives. This could lead to issues such as undermining democratic

processes or violating the rights of individuals or groups.

3. Privacy and surveillance: ChatGPT can be used to analyze and generate text from large amounts of data, which could be used to gather intelligence or conduct surveillance on individuals or groups. This could lead to issues such as violating privacy rights or targeting individuals or groups based on their beliefs or affiliations.
4. Autonomous weapons: If ChatGPT is used in autonomous weapon systems, it could be a source of concern as it could lead to unintended consequences, such as collateral damage or civilian casualties.
5. Lack of accountability: ChatGPT is a machine learning model, it does not have human-like consciousness, and it is difficult to hold it accountable for its actions. This could lead to issues such as avoiding responsibility for the consequences of its actions.

It is important for military organizations to consider these ethical concerns when using ChatGPT and other language generation models, and to develop and implement guidelines and protocols to ensure that the technology is used responsibly and ethically [6].

## Conclusion

In conclusion, ChatGPT has the potential to greatly enhance and improve various military operations and capabilities. Its advanced language processing capabilities can be used to develop new techniques and algorithms for tasks such as automated target recognition, military robotics, material development systems testing, military medicine, battle space autonomy, intelligence analysis, record tracking, military logistics, information warfare, driverless vehicles, surveillance, lethal autonomous weapons systems, battlefield environmental support, virtual and augmented reality modeling and simulations, free air combat modeling, missile guidance, communications, and network security, data fusion for situational awareness, swarm intelligence for swarm combat, autonomous flight control of UAVs, AI satellites and software-defined satellites, wearable systems for individual personnel, management of large amounts of military data and counter-AI operations. However, it is important to consider the ethical implications of using such advanced technology in military operations. The author states that these claims have been made by chatGPT itself and the actual possibilities currently are limited. The author acknowledges asking chatGPT questions regarding its uses for patient care. Some of the uses that it states are possible now and some are potentials for the future. The author has analyzed and edited the replies of chat GPT.

## Acknowledgment

The author acknowledges that this article was partially generated by ChatGPT (powered by OpenAI's language model, GPT-3.5; <http://openai.com>). The editing was performed by the author.

## References

1. <sup>^</sup>L. Campbell, A. Lotmin, M. M. G. DeRico and C. Ray, "The use of artificial intelligence in military simulations," 1997 *IEEE International Conference on Systems, Man, and Cybernetics. Computational Cybernetics and Simulation, Orlando, FL, USA, 1997, pp. 2607-2612 vol.3, doi: 10.1109/ICSMC.1997.635328.*
2. <sup>^</sup>ZHANG Zhi-min, SHI Fei-fei, WAN Yue-liang, XU Yang, ZHANG Fan, NING Huan-sheng. *Application progress of artificial intelligence in military confrontation*[J]. *Chinese Journal of Engineering*, 2020, 42(9): 1106-1118. doi: 10.13374/j.issn2095-9389.2019.11.19.001
3. <sup>^</sup>Szabadföldi, István. "Artificial Intelligence in Military Application – Opportunities and Challenges" *Land Forces Academy Review*, vol.26, no.2, 2021, pp.157-165. <https://doi.org/10.2478/raft-2021-0022>.
4. <sup>^</sup>W. Wang, H. Liu, W. Lin, Y. Chen and J. -A. Yang, "Investigation on Works and Military Applications of Artificial Intelligence," in *IEEE Access*, vol. 8, pp. 131614-131625, 2020, <https://doi.org/10.1109/ACCESS.2020.3009840>.
5. <sup>^</sup>Bistrón, M.; Piotrowski, Z. *Artificial Intelligence Applications in Military Systems and Their Influence on Sense of Security of Citizens. Electronics* 2021, 10, 871. <https://doi.org/10.3390/electronics10070871>.
6. <sup>^</sup>Wasilow, S., & Thorpe, J. B. (2019). *Artificial Intelligence, Robotics, Ethics, and the Military: A Canadian Perspective. AI Magazine*, 40(1), 37-48. <https://doi.org/10.1609/aimag.v40i1.2848>.