



TECHNOLOGY FEATURE Industrial Trends / Research Findings

The importance of Data Analytics and Algorithms in Defence Infrastructure

The more data & information you can get, the more advantage you have over the enemy today. This is exactly what AI Algorithms have achieved and changed the strategies of war forever. They create "Information Dominance"!

Muaaz Farooq | University of Agriculture Faisalabad, Pakistan | Published: 14th April 2026

[✉ muaaz2006@gmail.com](mailto:muaaz2006@gmail.com) | Position: Student, Computer Sciences

Introduction

Most people think that military power is evaluated based on how much tanks or troops you have, but now after the recent usage and results of that usage of AI in military conflicts like that of Israel vs Gaza and USA vs Iran, most of defence analysts have updated their opinion which reflects that the most important part in this evaluation is now played by the ability to gather large amounts of data and extracting useful information from that using latest AI and ML technologies. Because the faster you know, faster you can act, more chances of avoid damage and be on the upper hand in any conflict.

The growth amount of investment that has been done in this department is worth noticing. In 2022, the total spending by all the global militaries into AI research and integration was 4.6 billion usd, which increased rapidly to 9.2 billion usd in 2023. Reports tell that it will be around 38.8 billion usd until 2028 which is a huge gap[1]. The US military has over 685 active AI related projects running. They literally invested 1.8 billion usd in 2024 alone which tells how serious this is being taken by the world powers[2]. Even if you see China, they are said to be doing most advanced AI projects in the world. These are just finances which are public and I am pretty sure, reality would be even more surprising.

"AI in the military does not mean killer robots, rather it is the process of speeding up the analysis of large and large groups of data and providing information quickly."

Technology Overview

The main thing is that understanding of the use of AI and Big data is not very difficult. You just collect the maximum of data you can, process it to extract information and quickly act on what you find. There are various sources used to get data like Satellite images, Drone recordings, intercepting communications, location and



financial data and social media etc... And then making patterns between them. Now the fun fact is that none of these is very much new as militaries have already been using these kind of data sources since 1900s. But the actual plot twist is that the way this data was being processed previously has completely evolved and now finding patterns using AI and ML has enabled us to extract useful information within hours that would previously take days or weeks through human analysts.

Also one more myth I would like to clear here is that most people believe that military AI means just “killer robots”, but that’s not how it works. In the actual AI is used more as an analytical assistant rather than a robot who would do anything to kill its target. So, people should be educated about this that final call is still in the human’s hand who is operating and deciding upon the results generated by AI. AI is just a modern tool to get the information extracted from raw data quickly and efficiently. The thing which can be concerning is that if the decision to be made is in seconds, should not there be questions about what that human operator is capable of while making decision without stress?

Case Studies

The idea to write this article firstly came to my mind specially because of recent hype of these two projects. It made me learn about them a little bit. So I would love to share them as case studies to better understand where we are right now as of AI being used in wars actively.

First one is Project Maven of US. It is not new and is actively working since 2017 but the reason for it being in hype recently was because of huge amounts of investments into this. Drones are still drones but the difference is that previously the footages they used to capture were being given to human analysts and now they are handled by AI. We already know the difference of speed between a Human maths teacher and a calculator. That is same here as AI is far more faster and efficient than a human analyst in analysing key patterns from thousands of footages and converting the data into information. Now here the fact is that in 2024, US Govt. gave the contract of 480 million dollars for the project Maven to a company named Palantir, and this is literally the leading company in US in regards of work in Artificial intelligence[6].



Figure 1: Project Maven: An intro to use of AI and Big Data Analysis in Modern Military Conflicts



The 2nd one is Project Lavender by Israel. It had also remained quite in a controversy when its use against Hamas was made public. It is basically a surveillance system that keeps eyes on where needed and looks for various key patterns to detect the enemy personnel. The Guardian and many others reported that this AI tool gave each person a score based on how likely they were to be a militant. The peak record is that it flagged 37 thousand Palestinian men as potential targets[9][10]. The reason for being in controversy is exactly that it gives only 20 seconds for a person to be approved as militant or not, which is quite wrong. I personally think that the way of detecting people based on scores is not a very intelligent decision and specially when an error rate of minimum 10% is also reported. Isn't it quite concerning that if 20 seconds are enough to detect every man seen on the system and decide about his life or death? [5]



Figure 2: Lavender: Israel gives a glimpse of what Lavender AI system operates and finds target zones.



Key Findings & Impact

The usage of AI algorithms in Military is spreading fast because of quick progress it has shown over recent years. Obviously, if a tool genuinely works and that too efficiently, why would someone be left behind while competitors are investing heavily?[1]. The most efficiency is shown when you find that these algorithms can translate intercepted messages instantly then combining data from multiple locations together to find patterns within no time which in case of even expert human analysts used to take days or weeks[3].

This efficiency is called “Information Dominance”. If I say in easier words, the term means when one side knows so much more than the other that it can predict enemy moves and respond before the enemy even acts [4]. Project Maven is a good example of this. It lets less number of people to do more work which was not possible previously as most important task of data analytics is handled by AI. The same approach is now being used in other areas too. For-example managing military supplies, predicting when equipment will break down, supporting medical decisions in conflict zones, and issuing early warnings when a situation is about to escalate. AI in the military is not only about weapons. Some of its uses are genuinely helpful for saving mankind.

There are also serious accuracy concerns. Human Rights Watch has warned that AI targeting tools often rely on incomplete data, leading to high error rates [5]. The Lavender system reportedly had an error rate of around ten percent meaning one out of every ten people it flagged was the wrong person. With review windows of just twenty seconds[10], catching those errors in time is extremely difficult.

What's Next?

AI and Big Data Processing are “THE NEXT” themselves. They will play a even bigger role then mentioned in military operations over the upcoming years. The money has been spent already, the systems are already running, and no major military is slowing down. The real question now is whether the regulations can catch up in time.

Right now, the honest answer is no. The G7 and G20 have put out guidelines, but countries are not required to follow them [7]. A country can agree to voluntary commitments on Monday and ignore them by Tuesday. In 2023, the ICRC and the UN Secretary-General jointly called on world leaders to create a proper, binding treaty on autonomous weapons [8]. By early 2025, the ICRC President was warning that the window to get real regulations in place is closing fast. [8].

The laws that govern warfare were written for a world where humans made the decisions. But I think those same laws should not be applied when a decision is made by algorithms based on incomplete information and that too in milliseconds.

Position of Pakistan

All the technical and financial information that I have shared above is not just an interesting topic for the read. But it is in the need of serious attention. The information is not only relevant to Generals or defense contractors that they start investing in AI but also for all of those technical people out there who are data scientists, engineers or anyone working in policy and not only those who are currently at these posts but also those students which in future will handle these positions. Now as of Pakistan which is in the middle of some genuinely complicated regional dynamics, having issues with 2 neighbourhoods, out of which one is 300+% times bigger than Pakistan and that is India I am talking about. The way they are investing for the research and deployment of AI in every



field is worth praising. Previously regional equilibrium was made by making of Atomic bomb and now that equilibrium is needed to be kept in place and that is only possible if we also keep ourselves ahead in this race of deploying AI in every possible field and department.

Now at last I would also love to mention that Pakistan is not totally disconnected from these new technologies, rather our talented people have also done a great job. Institutionally if we talk, Pakistan's pride, Pakistan Air Force established the Centre for Artificial Intelligence and Computing (CENTAIC) in 2020, focusing on threat recognition, data fusion, and electronic warfare [11]. The National Centre of Artificial Intelligence (NCAI) at NUST further reflects Pakistan's deliberate push toward AI-capable defence infrastructure [12].

Pakistan has also developed its own drones. The Burraq, built by NESCOM, has already been used in counterterrorism missions. Then there is the Shahpar-III, which was shown to the public at a defence exhibition in November 2024. It can fly for long periods at medium altitude and uses AI to carry out surveillance and strike targets with precision [13][14].

These systems were tested in real conditions during the May 2025 India-Pakistan crisis. Pakistan deployed Shahpar-II and the scale was significant. Pakistan launched 300–400 drones at 36 locations in a single night. Part of the strategy was to figure out where the enemy's air defence systems were and how they responded[15].

And here is the most exciting fact about the practical implementation of Data Fusion which enabled Pakistan's fighter Jets to detect targets even beyond their own radar range just with the help of how the static ground powerful radars detected those targets and sent patterns live to the pilots. It has completely changed the way air warfares were fought.[16]

About the Author

Muaaz Farooq is a student of Big Data Analytics at the University of Agriculture, Faisalabad, with an interest in the intersection of artificial intelligence, data science, and geopolitics. He can be reached at muaaz2006@gmail.com.

Keywords: Artificial Intelligence; Big Data Analytics; Military Technology; Geopolitics; Autonomous Systems; Cyber Warfare, Killer robots misconception, Military Drones, Lavender, Maven.

References

- [1] Belfer Center for Science and International Affairs, "Code, Command, and Conflict: Charting the Future of Military AI," Dec. 2025. [Online]. Available: [belfercenter.org](https://www.belfercenter.org)
- [2] European Parliamentary Research Service, "Defence and Artificial Intelligence," Feb. 2025. [Online]. Available: [europarl.europa.eu](https://www.europarl.europa.eu)
- [3] Journal of Global Security Studies, "Digital Targeting: Artificial Intelligence, Data, and Military Intelligence," May 2024. [Online]. Available: academic.oup.com
- [4] The Forge, Australian Defence College, "Data Dominance in Modern Warfare: The Crucial Role of AI and Data Analytics." [Online]. Available: theforge.defence.gov.au



- [5] Human Rights Watch (2024) "Questions and Answers: Israeli Military's Use of Digital Tools in Gaza." [Online]. Available: [hrw.org](https://www.hrw.org)
- [6] DefenseScoop (2024) 'Palantir lands \$480M Army contract for Maven artificial intelligence tech,' May 29, 2024. [Online]. Available: [defensescoop.com](https://www.defensescoop.com)
- [7] G7 Leaders' Statement on the Hiroshima AI Process, 30 October 2023 ([mofa.go.jp](https://www.mofa.go.jp))
- [8] ICRC statement, March 06, 2024. [Online]. Available: ([icrc.org](https://www.icrc.org))
- [9] H. Davies and Y. Abraham, "'The machine did it coldly': Israel used AI to identify 37,000 Hamas targets," *The Guardian*, Apr. 3, 2024. [Online]. Available: ([theguardian.com](https://www.theguardian.com))
- [10] Y. Abraham, "'Lavender': The AI machine directing Israel's bombing spree in Gaza," *+972 Magazine and Local Call*, Apr. 3, 2024. [Online]. Available: ([972mag.com](https://www.972mag.com))
- [11] PAF NASTP / Second To None, "CENTAIC's Transformation Under PAF NASTP," May 10, 2024. [Online]. Available: [secondtonone.com.pk](https://www.secondtonone.com.pk)
- [12] National Centre of Artificial Intelligence (NCAI), NUST, Official Website. [Online]. Available: ncai.nust.edu.pk
- [13] Wikipedia / GIDS, "GIDS Shahpar-III," updated 2025. [Online]. Available: en.wikipedia.org/wiki/GIDS_Shahpar-III
- [14] Quwa Defence News, "Pakistan's Shahpar-III Promises a Next-Gen Drone Ecosystem," Dec. 14, 2024. [Online]. Available: [quwa.org](https://www.quwa.org)
- [15] Observer Research Foundation (ORF), "The Use of Drones Marks a New Phase in India-Pakistan Hostilities," May 13, 2025. [Online]. Available: [orfonline.org](https://www.orfonline.org)
- [16] ISI Indonesia, "The Kashmir 2025 Crisis: Data Fusion and the Changing Nature of Air Warfare," *ISI Indonesia*, 2025. [Online]. Available: [isi-indonesia.com](https://www.isi-indonesia.com)