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REMOTE MEDICAL APPLICATIONS OF ARTIFICIAL INTELLIGENCE

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ABSTRACT

Artificial intelligence, usually referred to as AI, is one of the technologies that is a cornerstone for the sustainability of human activities. When we hear the term AI, we instantly see robots that can perform tasks independently much like a person. An artificial intelligence (AI) system might be used to foretell user interests. What role does artificial intelligence (AI) play in the usage of telemedicine, for instance, in the context of mobile applications? Benefits for the patient will be provided through the application of AI technology. Definition of mobile telemedicine as it relates to Halodoc refers to a network-based health consultation service that allows patients and doctors to consult. AI may research a patient's history and the actions that are performed on them. In order to increase performance efficiency between physicians and patients and ensure the security and confidentiality of patient data, this data collection generates suggestions regarding services and complaints without directly contacting the doctor, patient information privacy, etc.

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1. INTRODUCTION

In a two-way conversation between a doctor and a patient, telemedicine refers to the use of information in medical consultation. To maintain communication across locations, this information is sent from one to the other [1]. Another definition of remote health care is that it is medical treatment that always entails clinical services. Patient treatment is delivered through voice and visual communication [2].

Indonesian English uses the term "artificial intelligence" to refer to this concept. A subfield of computer science known as artificial intelligence (AI) creates machines in computers that can subsequently do tasks on their own, independent of human programming [3]. When it comes to AI, programmers play a key role in making sure the system operates without constant supervision. Science includes several subfields, however

unlike artificial intelligence, this discipline focuses on things that can function like people and can carry out all human activities [4].

Humans are capable of knowing everything there is to know and seeking it out. Man himself may be used to get this information through his experiences [5]. The activity of the search process for information and the experiences he has leads to human beings becoming intelligent. Similar to how reasoning works, human beings are unable to solve an issue sensibly without the aid of information and experience. intelligently approach the issue [6].

Due to the many benefits of using AI in today's digital world, many businesses are beginning to develop new ways to incorporate it into the goods and services they provide [7]. Due AI-powered machines are thought to be able to recall inputs of newly acquired knowledge with ease, this artificial intelligence is thought to be able to keep the most recent information [8]. This is because of the modern age's rapid technological advancement. With AI, information may be conveyed more quickly and accurately from one person to another without needing a lot of processing time. AI's benefit is that it is able to work a little fast and effective data processing similar to natural intelligence by humans, performed [9].

A user can utilize Halodoc, a mobile telemedicine application or online health consultation service, at any time and anyplace. Halodoc is the first artificial intelligence (AI) application in Indonesia that is focused on humans (HAI) [10]. To increase the functionality of the AI system in this application and give consumers a better experience, HAI innovation is anticipated to be able to accept input, respond automatically, and do both rapidly [11]. The issue formulation in this discussion will center on how to best utilize artificial intelligence on the Halodoc application as a solution for an online health channel in order to address the numerous complaints made against its users, as mentioned in the background discussion above [12]. How the Halodoc program is enhanced by artificial intelligence to optimize user feedback from users.

2. LITERATURE REVIEW

An area of computer science called AI (Artificial Intelligence) focuses on understanding how people behave. The programming instruction known as artificial intelligence (AI) allows computers to carry out every task on their own and is often even superior to humans' inherent intellect [13]. HAI, or "Human-centered Artificial Intelligence," is the term for the application of AI in the Halodoc application [14]. In order to continually enhance the AI system and give consumers a better experience, this research incorporates feedback from its users, a positive user-experience.

With the help of Google's Late Stage Accelerator Machine Learning specialists, Halodoc develops a simple method for providing feedback in the area of online health by utilizing AI. Halodoc programmers use Natural Language Processing (NLP) in Indonesian to assess, rate, and present insights that might assist doctors in making decisions regarding their patients [15].

3. DISCUSSION

The field of mental health is one of several areas that have been affected by artificial intelligence [16]. Technologies and machine learning have made it possible to innovate in new ways, with a particular focus on individualized service and assistance for human emotional difficulties [17]. In order to create a level of this application, for instance, the Ginger.io app integrates machine and network. How Ginger.io uses user data to track users' habits, users' habits, and the individual's actions inside the app [18]. This information is compared with users' habits and activities to identify users who may be suffering from mental illness and issues an alert on the account. Alerts are sent out when a user notices anything that is below normal, such as lethargy caused by a lack of movement, a change in habits, sadness, or other symptoms linked to a person's condition [20].

In order to address the online healthcare demands of Indonesians, Halodoc, a mobile telemedicine start-up, can offer solutions [21]. In the country of Indonesia, the application of AI, or artificial intelligence, in the field of health is beginning to spread. In order to make judgments and diagnose patients, AI is employed as a data-based service, apps, and computerization [22]. How does Halodoc function? With the use of the "Contact Doctor" tool, patients may connect with a variety of doctors, including general practitioners

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and specialists, to discuss any health issues they may be experiencing. About 20,000 specialists and general practitioners with active licenses to practice have worked with Halodoc (SIP). Messages or chat, a phone call, or a video call can all be used for this consultation. Patients of Halodoc are not charged a consultation fee by a physician and each session is only allotted one hour.

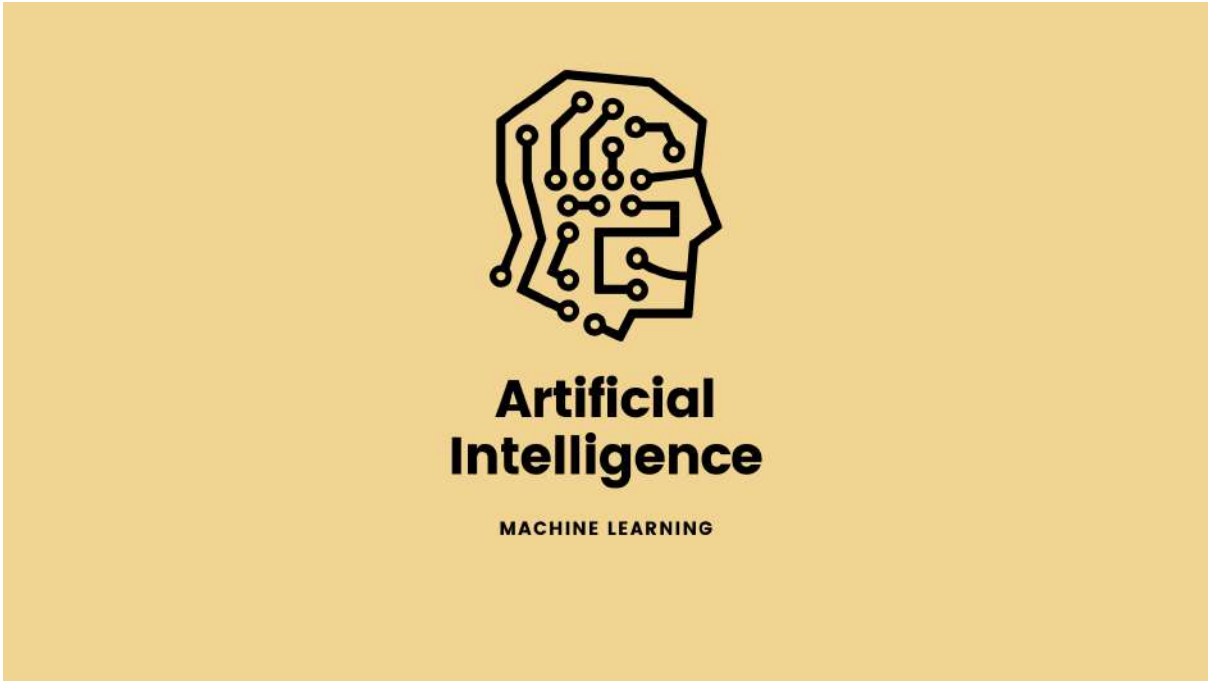

Figure 1. Artificial Intelligence

Notification of whether or not the consultation is appropriate is another way that AI is used [23]. There is also a feedback tool directed at the doctor to offer standardization whether the service is excellent or less, and the response from this notification feature is used as a guideline in analyzing the data to produce results whether the consultation is good or not good. With the help of this function, we can rapidly determine whether AI has been included in the screening process for patients and doctors.

Instead of using the online-to-offline (O2O) idea to integrate Alodokter features with the required services, like its rival Alodokter does, this application of AI uses it. In order to speed up the transaction process, Alodokter also collaborates with the business ShopeePay. This is one of Alodokter's own strategies. This data set is utilized as a reference for consumers to use when filing complaints, and it will be referenced on the Application once the AI system's integration infers a collection of data about transactions that have taken place and will take place from customers.

Here are 5 possible ways artificial intelligence technology might be used to enhance Indonesian health services: the usage of patient-facing chatbot features, AI-based face mask identification, process optimization for obstacles, operating room optimization, and image-based cancer screening in healthcare.

AI also has the potential to be used to forecast when patients will be admitted and get medical care at a hospital by optimizing the procedure [24]. Then, hospitals will be able to know what needs to be done to overcome hurdles so that patients may receive the best care possible with the use of AI support for process optimization [25].

4.1. Technology that uses artificial intelligence has advantages

Each person has been significantly impacted by the introduction of AI technology [26]. This technology makes work easier and accelerates productivity. Due to the fact that

the data collected has been designed to follow specific guidelines, AI also has a high level of accuracy. The use of AI in healthcare. In order for modern telemedicine to concentrate on high-level duties with a focus on patient care and patient aid, automation of repetitive chores plays a significant role. Later on from the Opportunity, the usage of AI helps to make the service better by lowering the number of medical mistakes, increasing service efficiency, and speeding up response times.

4.2. Artificial intelligence technology's difficulties

Artificial intelligence (AI) offers a wide range of applications, especially for data sharing, enhancing security and safety, and updating any regulatory approach. AI will also analyze the risks that will be accepted either by judgments or through assessment of the hazards themselves. The effect of AI extends to a number of industries, particularly the health sector. However, users of AI, such as physicians and nurses, are still not guaranteed a definite outcome. physicians or nurses, for example. How the technology, knowledge, experts, and ethics are applied to this technology is a crucial aspect of the AI dilemma.

4. CONCLUSIONS AND SUGGESTIONS

Artificial intelligence (AI) is used in the healthcare industry to improve diagnostic and prognosis accuracy as well as streamline hospital operations through health checks.uncovering new media knowledge and automatically detecting anomalies in digital imaging

The usage of AI (Artificial Intelligence) is anticipated to be a solution to attempts to maximize its function, to provide ease for its users, and to reduce human error, when a collection of data from user track record activities may be handled successfully such that references appear that are relevant to the discussion of what the user needs, referring back to the earlier debate on the Halodoc application's use of AI as an endeavor to provide good service without the need for human assistance.

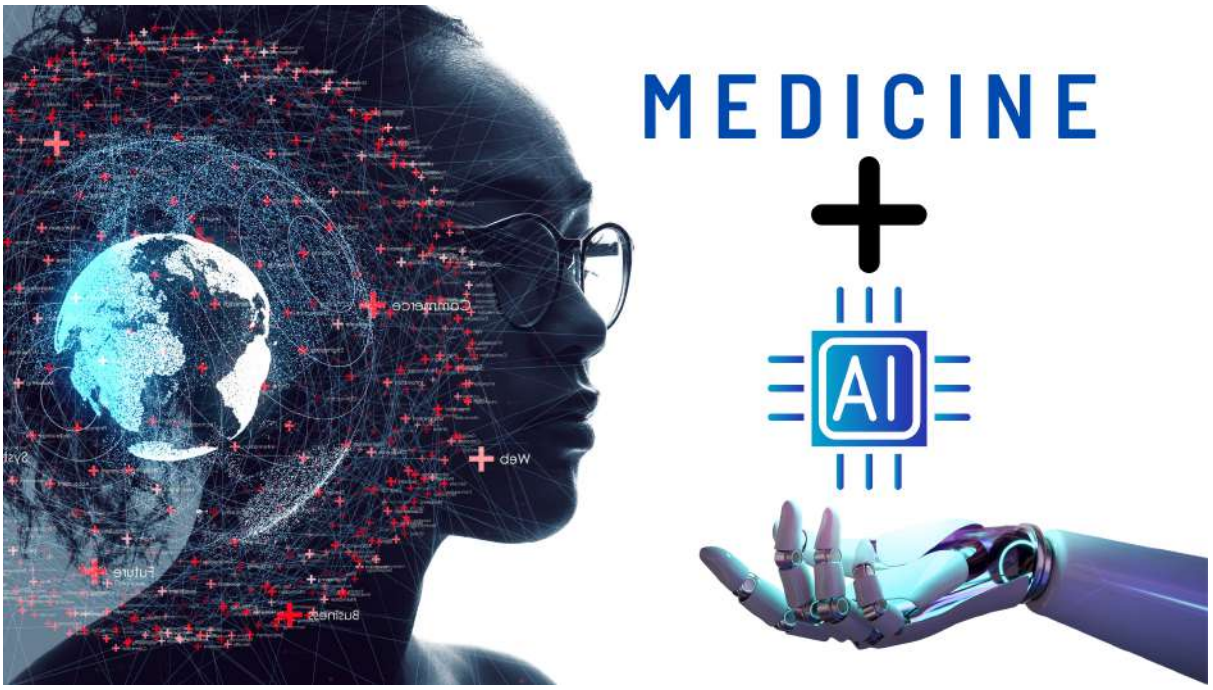

Figure 2. Artificial Intelligence

As with Industry 4.0 and the transition to Industry 5.0, research on the application of AI technology in the realm of health is crucial. All job done by AI will be more precise and efficient, and it will be able to give advantages without constant supervision. AI-based work will be more precise and effective. Telemedicine is a great tool to employ in the ongoing

pandemic age since it avoids physical touch. When contacting a doctor, patients can use this technology to voice their grievances. The latest breakthrough will be made possible by this research's use of AI, which will also help human activity.

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