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## Guest Editorial

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## 1 Introduction

The special issue of the *International Journal of Data Science (IJDS)* is publishing very selective papers that were rigorously peer-reviewed by at least three reviewers in the field of data science and big knowledge.

We received several papers for this special issue from engineers, researchers, and industry professionals, from all around the globe to publish their research in the field of data science and big data. But after an extensive double-blind peer review process, a few contributions were selected. Each paper presents novel approaches in the networks, pattern recognition, smart algorithms, machine learning, and decision support system.

Data science presents fundamental principles that help to extract valuable information from data which later becomes knowledge. The close topic of data science is data mining which is a technical extraction of the most appropriate data that can be used to build several smart computer applications including smart gatekeepers, emergency response systems, QR codes, and safety and security applications.

The other most important topic after data science is big data including big knowledge. Big data is a concept rather than a term and this concept is coined to deal with factors and challenges in data mining from big data. The practitioners and researchers are actively working to discover the basic characters of big data that can later be utilised to develop the smart application using big knowledge, big-knowledge system, and big-knowledge engineering.

To address some important aspects of the above topics, we discovered the need for a special issue with high-quality papers that focus on recent trends and application data science and big knowledge. This special issue provides the collection of papers addressing the important contributions in the above subject. These contributions are in the field of configuration simulations, smart QR code applications, the safety of mobile applications, recognition system, feature transform algorithm, and decision-driven support system.

## 2 Overview of submissions

In the current era, wireless networking has become an essential part of the recent telecommunication systems. In this work, the author presents the study of the WiMAX network during the handover of a portable hub from the home operator base station to another base station. It is known that when the hub moves from its home operator it can get packets, however, the sending process decreases with the handover shows up. This issue has been resolved by utilising the OPNET test system demonstrated the system execution in rush hour gridlock send and get for a VoIP application. The authors built two situations and breaks down the outcomes. The principal situation is the typical case without taking care of the Handover issue, the outcomes show that the portable hub can do both sending and accepting bundles when it is situated in the home operator base station range. On the off chance that the versatile hub handovers the other remote base stations leaving the home operator run; just the receiving procedure influences and decay reveal to it arrives at zero while the decently sending the procedure demonstrations.

For the subsequent situation, the authors arrange the Handover for the WiMAX model. The outcomes show that the portable hub can effectively send and get packets for

the voice application even it was inside its home operator or handover between other outside base stations (Ibrahim, 2020).

Electronic Gatekeeper is a web framework that helps guardians or vehicle drivers to call their students from perspective educational institutes. Most of the time, this task requires a security man to validate the man who needs to take his student from an educational institute, particularly toward the beginning of the day, this case has a ton of problems and issues. The objective of this work is to propose innovation to tackle issues, spare time, and exertion. The proposed framework began by a calling procedure done by a call from the parent or the vehicle driver to the students by the framework, at that point the name of that student will show up on a screen inside the institution likewise the name will be spoken by speakers. At long last, the student can exit from the door by passing a special and extraordinary QR code card to get authorisation to leave the institutions by proposed Gatekeeper framework (Elomary et al., 2020).

These days, there are various tragic occasions, which influence countless people in the world including emergencies, fires, floods, street mishaps, earthquakes, and terrorist attacks. Most people use portable and web applications throughout the day. From the writing survey, we found that the coordination between emergency services are not satisfactory. Different emergency organisations should share various sorts of assets, for example, data, equipment, vehicles, and so forth. Thus, the emergency response groups need to utilise a successful coordination structure to moderate the aftereffects of any emergencies. Under these conditions, respondents, emergency administrations, and volunteers work hard to communicate and divide resources among themselves. In this research, the author investigated the coordination in emergency response with adaptable methods, by creating a flexible and dynamic mobile platform which offers tracking mechanism and information management. The developed application is named as Safe Soul. The Safe Soul application gives clearing plans and earlier coordination forms for the number of undergraduate students, and the number of emergency exits. The application additionally accomplishes correspondence on long-range interpersonal communication stages (Alharbi et al., 2020).

Recently, it has been noticed that there are several organisations using banknotes for their commercial transaction. Therefore, there is an intense need for frameworks to observe and identify the banknotes. Existing frameworks rely upon several steps to analyse the currency and its type of value. For example, these systems use these systems scale-invariant feature transform (SIFT), speeded up robust features (SURF), and speeded up robust scale invariant feature transform (SR-SIFT). In this work, the authors clarify the most significant advances that the cash investigation framework experiences them like database arrangement, picture pre-processing, picture investigation, cash acknowledgment, and acknowledgment investigation with a clarification of each stage with examples. The authors used colour and texture of currency for identification.

The pre-processing step is applied for the improvement and detection of features to ensure that the system is reliable when the images are with distortion (Alharbi et al., 2020).

Most business exchanges are yet done utilising physical currency standards. Identification of fake cash can improve the solid quality of ATMs and counting machines to guarantee legitimate support tasks and affirm the worth including the legitimacy of cash. Many paper currency standards or banknotes are exposed to the nearness of certain issues, for example, rolling, and wrinkling. In this work, the authors identify and analyse the impact of applying a currency recognition algorithm that is speeded up robust

scale-invariant feature change (SR-SIFT) algorithm in distinguishing the money paper in the ordinary presentation and any difficulties like rolled, wrinkled or collapsed. The outcomes show that the SR-SIFT algorithm can helpfully perceive the monetary forms in a distinctive circumstance with high accuracy. The technique is capable enough to detect the currencies in a different situation with low error rates and high accuracy (Almutlaq et al., 2020).

These days, there is a huge number of deaf and dumb people in our general public, particularly in Saudi Arabia. The gesture-based communication is thought of to be the principal approach or solution to interconnect with deaf and dumb people, however, the greater part of the ordinary individuals have no thoughts regarding this language. Consequently, there is a developing need to discover alternative solutions for communicating with deaf and dumb people. In this work, the authors proposed three distinct strategies that can help deaf and dumb people to have a better and simple life. To start with, the “ABSHER for deaf” services can assist these deaf people by using their account for the ministry of interior (MOI) which is called ABSHER. Second, the “keyboard for deaf” element can support the gesture-based communication pictures and images in the keyboard as an alternate component to change over between the normal individual language, furthermore, the deaf language. At last, “know about your medication” that can help hard of deaf people to see all the data about the medication given to them. All three techniques show promising results for disable people (Alhassan et al., 2020).

New developments in the technologies have given a few chances to help the procedure of dynamic by using decision support systems (DSS). These days, DSS is one of the most significant administration frameworks in the cutting-edge condition of the business. The comprehension of DSS and how these frameworks can incorporate business knowledge and successful management is critical to directors and decision-makers. Document driven DSS is one of the most widely recognised kinds of DSS. It built up to help decision-makers and managers during the decision making process by encouraging the means of extracting data and information. Document driven DSS searches for records by specific keyword on a site page and apply a collection for processing to complete document recovery and investigation.

In this work, the authors presented a fundamental understanding of document-driven decision support Systems (DDDSS) to decision-makers and managers. Additionally, it means to help specialists keen on this field of DSS. Aggregately, this work depends on past studies about DSS and document-drive DSS particularly. It showed the targets of document-driven DSS and the kinds of reports that it utilised. At that point, it introduced the highlights of document-driven DSS and clarified how can it work. It referenced likewise the advantages of document-driven DSS. It also shows the benefits of document-driven DSS. The connection between the benefits of document-driven DSS and knowledge management was additionally explained. Other than that, this work explains some of the uses of document-driven DSS in the fields of enterprises and education (Abdullah et al., 2020).

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