LANGUAGE ENGINEERING: ISSUES AND PROSPECTS

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Abstract

This paper has been able to examine the issues and prospects of language engineering. It affirms that language engineering has to do with the use of knowledge of language to advance computer scheme which can identify, understand, read (interpret), and create human language in all its systems or forms. The study reveals that language engineering has a lot of advantages to humanity in general. It can provide ways in which humans can extend and improve the use of language to make it a more effective tool. It can also assist in speech recognition, understanding, and generation by computer can make human interaction more efficient. It further insists that the development of language engineering can assist humanity to overcome the challenges of having several information to cope with and it can deliver sensitive information with more accuracy, truthfulness and precision. This suggests that it can deliver information without alteration. It can assist the users of minor languages to know more about what is happening around the world both locally, internationally, in business, in administration, in political activities and as citizens and consumers. It therefore suggests that Nigerian Government should explore the advantages of language engineering in order to overcome communication barriers.

Keywords: language engineering, issues, prospects, communication, computer

Introduction

Language is the most operative or natural means humans in a given society express themselves. This suggests that without language, it is extremely difficult or impossible for humans to communicate. It is commonly used in diverse ways to elucidate complex notions, concepts and ideas in order to harness both human and natural resources in a given environment. It can be used to exchange, to argue, to express one's need(s) and feeling(s), to recite stories, to document the culture of its users for upcoming generations and to produce aesthetic in literary works such as poetry, drama and prose. Simply put, language is central to human survival in his immediate environment. However, it is observed that the use of

language is sometimes constrained. This is because most languages are only used in direct interaction between human beings. It cansometimes present a barrier to communication.Thus, there is urgent need to revolutionize the use of language and significantlyimprove the value of language in every phase of interaction. In view of the foregoing, this paper examines the issues and prospect associated with language engineering.

The Concept of Language Engineering

According to Diver (1997) cited in Wright (2019), the term "language engineering"has to do with the application of the knowledge of language to the development of computer system which can recognize, understand, interpret, and generate human language in all its forms. In practice, language engineering comprises a set of techniques and language resources. He observes that whereas language engineering is implemented in computer software, a language resource is a repository of knowledge which can be accessed by computer software. It is also noticed that language engineering provides ways in which individuals can extend and advancetheir use of language to make it a more operational tool. It is based on a vast amount of knowledge about language and the way it works, which has been gathered through research. It uses language and the way it works, which has been accumulated through research. It uses language resources, such as electronic dictionaries and grammars, terminology banks and corpora, which have been develop over time. Diver (1997) further avers that language engineering can also be defined as a technology which uses human's knowledge of language to enhance theuse of computer system, improving the way they interface with them, assimilating, analyzing, selecting, using, and presenting information more effectively and providing human language generation and translation facilities. This suggests that language engineering is a very relevant tool for translators. In other words, it can be used to transfer message from one language text into another language text which assists in preserving the source message and style (Oweleke, 2017).

This suggests that language engineering presents differentprospectsor themethodof doingthings by individuals in a given speech community. It makes them easier and more operative by manipulatingindividual's advancing knowledge of language. This is because a machine can take cognizance of written human language and speech as an input in diverse languages. this can create easy access to a largevariety of information and communication services, as well as the capacity to carry out business transaction tenuously, the mobile or other telematics services. A machine can be used to interpret natural language, translates between diverse languages, and produces speech and also printed output. This can be a very strong tool to help languages of smaller linguistic groups which some refer to as the language of minority. From the foregoing, it is clear that a machine can help an interpreter or translator to swiftly understand natural languages better. This makes humans to avoid misinterpretation of informationwhich result in cooperation in both private business and governance. Simply put, language engineering has several advantages international trade and can help in reducing the dominance of one language.

The Small Group Languages and Language Engineering

The term "small group languages" is used in this paper synonymously with the term "minority languages." this is in line with Yul-Ifolde (2001) and Ayuwo (2013) who insist that all hunman or natural languages are equal. The main difference between the minor and major

languages is the population of their users. Brosnaham (1963, p. 23) avers that "the number of languages spoken in Nigeria is not even approximately known, but seems unlikely to be less than 150." On the contrary, Kari (2019) notes that Nigeria especially Rivers State is a linguistically complex society with over four hundred to five hundred indigenous languages. According to him, none of the indigenous languages spoken in Rivers State is used nationally or internationally. Only languages such as Hausa, Igbo and Yoruba are classified as major languages. This implies that Nigeria is a multilingual society with different high level of linguistic complexity. Also, it is noticed from the assertions of Kari (2019) that all the languages spoken in Rivers State are small group languages in Nigeria.

From the discussion so far, it is construed that language engineering has several benefits for the small group languages to have access to information proficiently. This can save time and prevent overloading information. It can also enable one to talk to his or her computer system even while at home, work, car and in public places. Furthermore, it can help in developing individual multilingualism. This can help the users of small group languages to be abreast with both local and international events in the society. Thus, they can effectively engage in business transaction, administrative, social and political events within them without language barrier.

The Issues and Prospects of Language Engineering

One of the main issues hindering the development of the most human society is linguistic complexity which is usually occasioned by multilingualism (Ndimele, 2014). Even though linguists have affirmed that language engineering has the ability to provide solution to the problem of multilingualism, it is one of the neglected areas in linguistic research. Therefore, it is the opinion of this paper that language engineering which is sometimes used synonymously with language technology can be usefulin solving some linguistic problems. There are different categories of problems in human endeavours including business,education and administration which can be solved through language engineering. They can be used in education, to help the disabled, and to bring new services both to the organizations and consumers. This is because it can provide sufficient information for business, education and administration.Business personnel can reach out to theirconsumers by providing services directly through tele-business. It has the ability to enhance E-commerce without any form bridge in communication.

More so, it is observed that language engineering provide better information to individuals and the society. One of the main features of information services is its capacity to convey information which meets the instantand real needs of itscustomer. It is not enough to provide information broadly in the category requested; in such a manner that the customer must select it and extract what is advantageous to them. Likewise, if the manner the information is extracted results insignificant omissions, then the results are at the best insufficient and at worst they could be completelyambiguous. Information is available throughout the world, on the World Wide Web, for instance, in various languages. In reality, however, it is only available to client who can firstly request the information in which it is recorded and then understand the language in which the information is represented. Using machine translation facilities the person seeking information will be able to complete an information request in his or her native language and receive the information in that same language, regardless of the language in which the information is recorded. Language

Engineering can improve the quality of information services by using techniques which not only give more accurate results to search requests, but also increase greatly the possibility of finding all the relevant information available. Use of techniques like concept searches that is using a semantic analysis of the search criteria and matching them against a semantic analysis of the database, give far better results than simple keyword searches. However, the wide accessibility of this information will depend upon language engineering. People who are not familiar with conventional user interface of a computer system will be able to request information by voice and system will guide them through the possibilities. Those who want information about other languages and countries, which may be held in English or other majority languages, will be able to receive it in their own language.

Direct Access to Services

In recent years there has been an explosion in the use of the telephone to delivers services such as banking, arranging insurance cover, and providing help desk facilities. The advantage of this type of service to the customer is that it provides a rapid response, 'around the clock'. For the supplier it is cost-effective because the business does not have to be conducted from expensive retail premises. Using speaker identification and speech recognition techniques it is possible to automate many of these services. A customer's telephone call can be dealt with by computer system which is capable of having a meaningful dialogue with the caller and delivering the service to the customer's satisfaction. Perhaps the most obvious example today is the automation of the telephone banking services which are already available from many banks. The computer, telephoning the service would be answered by a computer which would firstly, analyze the characteristics of the customer's voice to identify it and verify the customer's rights of access to the service. Then a dialogue would be conducted between the customers and the computer to establish the services required and to complete any transactions needed, e.g. paying a bill, providing a statement and so forth. Other examples could be ordering tickets for the theatre, making reservations for a journey by rail, ship, or aeroplane, and home shopping via cable television. Apart from the economic advantage of automating services to provide 'around the clock' and availability, it also removes the need for people to work long and unsociable hours to provide the necessary coverage. Services are likely to be more consistent, first, and reliable. In addition theautomatic recording of an audit trail for each transaction will mean that each party to the transaction can feel confident about its outcome.

Communication is probably the most obvious use of language. On the other hand, language is also the most obvious barrier to communication. Access cultures and between nations, difficulties arise all the time not only because of the problem of translating accurately from one language to another, but also because of the cultural connotations of word and phrases. As the application of language knowledge enables better support for translators, with electronic dictionaries, thesauri, and other language resources, and eventually when high quality machine translation becomes a reality, so the barriers will be lowered. Agreements at all levels, whether political or commercial, will be better drafted more quickly in a variety of language. International working will become more effective with a far wider range of individuals able to contribute. An example of a project which is successfully helping to improve communications in our nation is one which interconnects many of the police forces of our nation using a limited, controlled languages which can be

automatically translated, in real-time. Such a facility not only helps in preventing and detecting crime, but also assists the emergency services to communicate effectively during a major incident.

Accessibility and Participation

One of the most important ways in which language engineering will have a significant impact is in the use of human languages, especially speech, to interfact with machines. This improves the usability of systems and services. It will also help to ensure that services can be used not just by the computer literate but by ordinary citizens without special training. This aspect of accessibility is fundamental to democratic, open, and equitable society in the Information Age. Systems with the capacity to communicate with their users interactively, through human language, available either through access points in public places or in the home, via the telephone network or TV cables, will make it possible to change the nature of our democracy. There will be a potential for participation in the decision-making process through a far greater availability of information in understandable and 'objective' form and through opinion gathering on a very large scale. Many people whose lives are affected by disability can be helped through the application of language technology. Computers with an understanding of language, able to listen, see and speak, will offer new opportunities to access services at home and participate in the workplace.

Improved Education Opportunities

Distance learning has become an important part of the provision of education services. It is especially important to the concept of 'life-long learning' which is expected to become an important features of life in the Information Age. The effectiveness of distance learning and self-study is improved by using telematics services and computer aided learning. The quality and success of computer aided learning can be greatly enhanced by the use of language engineering techniques. If the computer aided learning package can understand the answers which its users give to questions, rather than simply recognize that the answer is right or wrong, it can direct them down a path which is more appropriate to their needs. In this way, students are likely to learn more effectively and have a longer concentration span, because a more sensitive package is inherently more comfortable to worth with.

Conclusion

This paper has been able to examine the issues and prospects of language engineering. Language engineering is a very important innovation in the linguistic. It affirms that language engineering has to do with the use of knowledge of language to advance computer scheme which can identify, understand, read (interpret), and create human language in all its systems or forms. The study reveals that language engineering has a lot of advantages to humanity in general. It can provide ways in which humans can extend and improve the use of language to make it a more effective tool. It can also assist in speech recognition, understanding, and generation by computer can make human interaction more efficient. It further insists that the development of language engineering can assist humanity to overcome the challenges of having several information to cope with and it can deliver sensitive information with more accuracy, truthfulness and precision. This suggests that it can deliver information without alteration. It can assist the users of minor languages to know more about what is happening

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