PAN Localization Stories of Change

Indonesia

First Story

Lisan : Linux by Voiced
Glimmer of hope Reducing Digital Divide
One side of the Implementyation of Free Open Source Software for Accessibility

Information and communication technology (ICT) has significantly great benefit to mankind. It made better quality of our life. Ease of access to information resources is one of them.
However, the development of ICT is unfortunately still not enjoyed by most of people with disabilities.

Indonesian Government, through the Law No.4 of 1997 on disability and Government Regulation No. 43 of 1998 on Improving Social Welfare for People With Disabilities has issued rules to empower them by provide the facilities and infrastructure in carrying out their daily activities.

In 2007 we started to developed Indonesian speech recognition system which is used to operate computer and voice dictation. The application name is LiSan, which means operate linux by voice. LiSan aims to improve the accessibility of computer so people with disabilities can operate computer and write a document using their voice.

LiSan developed by utilizing the free open source software such as HTK for creating Indonesian acoustic model, PALM Kit for creating Indonesian language model and Julius, a speech engine, for the decoding process.

In 2008 we carried out workshop for student with disabilities in Bandung, West Java. They were very enthusiastic using this application and said that they could operate computer without the help of mentors.

The development itself still remain some problems. One is the speech corpus size. It is still too small to accommodate all of the linux command. Another obstacle is the decrease of accuracy in the use on high noisy environments. The treatment for noise, both from the hardware and software side need to be explored further. Another obstacle is large variation of voice users, especially people with disabilities. Over half of the students has voice that 'not normal' compare to our voice. In order to produce better accuracy, it takes a special voice data from their voice to train the system.

Second Story

Indonesia-English machine translation gives easier in life

Many resources, especially exist in the web have been written in English, and many people do not use English as their mother language. Because of this, many people have difficulty in read and understand English article. A problem is also exists when translating non-English to English. The latter one usually has been facing by academician when they need to translate their paper into English. In practical, the translation can be done using dictionary by looking up word by word, but it is not easy and needs lot of time. Today, these translation processes can be done faster using machine translation system.

There is also similar situation in Indonesia where there are still many people who cannot speak and understand English; previously, when we want to translate from Indonesian to English or vice versa, we need to look up dictionary, searching the meaning of the word. Since 2000s, there are a lot of initiatives in developing machine translation system, such as toogletext (www.toogletext.com), transtool, google translate, etc. Following figure shows the using of google translate.
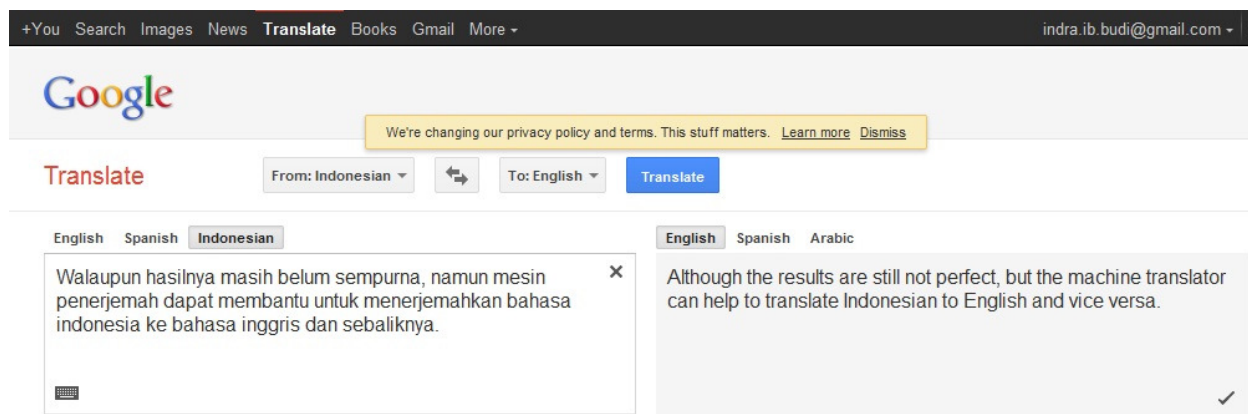
Many parties, especially student and academician get a lot of advantages with this existence of the machine translation. The results of the translation still not perfect, it needs to be fixed, but it runs faster than manually processing. Further development to improve the accuracy and the performance of this system is still needed.