SOFTWARES FOR HINDI- HINDI e-TOOLS

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Abstract— Numerous tools and techniques are available in the field of Hindi also because technology is in reach of rural areas where ratio of Hindi users are more than English users. Even Hindi content users are surpassed English content users, so industries make tools and techniques for easily availability and editing of Hindi content. Various softwares are available in Hindi like input tools for Hindi, spell checkers for Hindi, script converters, Hindi text analysis, Hindi optical character recognition, Hindi e-mail and chat or natural language processing for Hindi language.

Keywords— Hindi content, Hindi eTools, Hindi software

11.2 INTRODUCTION

No one can deny that usage of Hindi contents is increasing nowadays. Enormous reasons are behind this take off it can be the promotion drive initiate by Government, internet reached in rural areas, locals feel more comfortable in their local language or Hindi software and mobile apps are in market etc. Taking all these factors into consideration even natural language processing branch of artificial intelligence set foot in Hindi language.

II. HINDI eTOOLS

Department of official language organizing many workshop and training to promote Hindi usage on the web. Following are the Hindi eTools[1]on department of official language website:

A. LILA Hindi Parvaah

B. Kanthasatha: Memory based translation software

C. Self learning Hindi- LILA – Prabodh, Praveen, Pragya

D. Machine Translation (English to Hindi) Mantra Rajbhasha

E. Shrutlekhan-Rajbhasha(Hindi speech to Hindi text)

F. Parvachak-Rajbhasha (Hindi text to Hindi speech)

G. E-Mahashbdkosh

Beside these tools exist in the field of Hindi are:

H. Input tools for Hindi- Hindi Indic IME 1 Type Pad, Google Indic Keyboard etc.

I. Hindi Translation softwares- OpenNMT, Moses, online translation , offline translation.

J. Hindi Text to speech and speech to text tools

K. Hindi Optical Character Recognition

L. Devnagari Learning Tools- Accha

M. Hindi e-mail and chat- mailing system for indian languages.

Tools and softwares in Hindi is not accomplished in the above mentioned list. Hindi language tools and techniques have enormous area now from basics input tools to complex artificial intelligence and neural networks.

III. INPUT TOOLS FOR HINDI

Input is the main component of computer system, it is not possible to process any data without entering it. So , input tools are essential requirement for every language whether i.e. English or other language. Input tools for Hindi are available online, offline and even for smartphones also. Some input tools for Hindi language[2]are:

A. *Google IME: It is Input Method Editor for 22 languages that includes Hindi. It is a virtual keyboard that provides hassle free typing environment.*

B. *Microsoft Indic Language Input Tool: It is available in both modes online as well as offline. It is a virtual keyboard that works on the dictionary based phonetics transliteration approach.*

C. *Indic Input 3: Software developed by Microsoft provide Hindi typing facility, keyboard is shown in English and letters are typed in Hindi on screen.*

D. *Anop- Hindi Typing Tutor: It can be used online and offline and free desktop application.*

E. *Aasaan Hindi Typing Tutor: It is an app in which an user can easily learn how to type in Hindi language.*

F. *Unicode typing tool: It is used to type letters e-mail, short stories or whatever anyone want to type in Hindi language.*

These are the some offline and online input tools for creating and editing contents in Hindi language because creation is the first step of everything without creating anything no one can proceed to next step.

IV.INTERNET TOOLS FOR HINDI

Internet is in reach of a huge population in India now and users are from diversified fields. In Indianumber of Hindi internet users are increasing therefore internet tools are available in Hindi also. Some internet tools that are available in Hindi[3] are the following:

A. भारतीयफायरफॉक्स *(वेबब्राउज़र)* काहिंदीसंस्करण:*It is the Hindi version of firefox web browser. With the help of this web browser users can easily access the websites and we resources.*

B. भारतीयथंडरबर्ड *(ईमेलक्लाइंट)* काहिंदीसंस्करण *(लाइटनिंगप्लगइनकेसाथ):* *It is a free email client, with the help of this user's can easily compose and send emails.*

C. हिन्दीसी-मंकी:*it is a web application suite that is available in Hindi. It is a part of promotion campaign of Hindi.*

D. भारतीयपिड़गिन *(सार्वभौमिकचैटक्लाइंट)* काहिंदीसंस्करण: *It is a free chat client. Users can chat to more that one network at same time and user friendly platform is there and it is easily affordable by users due to free availability.*

V. HINDI TRANSLATION SOFTWARES

In this competitive world a person should have multilingual knowledge and translation softwares are very helpful in this. It is possible to translate from one language to another online as well as offline. Some Hindi translation softwares[1] are the following:

A. *OpenNMT[4]: It is an open source ecosystem for neural machine translation and neural sequence learning.Started in December 2016 by the Harvard NLP group and SYSTRAN, the project has since been used in several research and industry applications. It is currently maintained by SYSTRAN and Ubiqus.*

B. *Moses[5]: It is a statistical machine translation system that allows automatically train translation models for any language pair.*

C. *Apertium[6]: A free/open-source rule-based machine translation platform*

D. *Online translation softwares: Google anuvad, Bing anuvadak, e-translator, sampark and many more.*

E. *Offline translation softwares: Global word translator, MANTRA Machine Assisted translation and many more.*

VI. HINDI TEXT TO SPEECH AND SPEECH TO TEXT TOOLS

Text to speech and speech to text tools are demand of this era. Various tools are available which convert text to speech and speech to text efficiently. This approach is beneficial for those who do not know a particular langauge and want to create contents in that langauge. Some Hindi text to speech and speech to text tools are as follows [1]:

A. *Indian Language Text-To-Speech (TTS) Add-In for LibreOffice[7]: TTS Add-in for LibreOffice is developed by C-DAC, GIST. It internally uses underlying service which is developed under TTS consortium project, supported by TDIL-MeitY. Currently 8 Indian languages: Bengali, Hindi, Gujarati, Marathi, Malayalam, Kannada, Telugu and Tamil are supported. Indian language Text-To-Speech Add-In for LibreOffice , gives the power of speech to Writer document. On click of a button, user can listen to the selected text in the LibreOffice writer. It specifically helps persons with dyslexia and persons who understand the language but cannot read the script or are not convenient with the script of that language.*

B. *Dhvani[8]: It is a text to speech system designed for Indian Languages. The aim of this project is to ensure that literacy and knowledge of English are not essential for using a Computer. We hope that it will reduce the digital divide and will be helpful for the visually challenges users as screenreader in their mother tongue .*

C. *eSpeak[9]: It uses a "formant synthesis" method. This allows many languages to be provided in a small size. The speech is clear, and can be used at high speeds, but is not as natural or smooth as larger synthesizers which are based on human speech recordings.*

VII. DEVANAGARI FONT

The essentiality to write any language is the font. Devanagari fonts are as follows [1]:

A. *Mangal[10]::* मंगलहिन्दी (देवनागरीलिपि) के लिये एक ओपन टाइप यूनिकोड फॉण्ट है जो कि विण्डोज ऑपरेटिंग सिस्टम का डिफॉल्ट हिन्दी फॉण्ट है। यह यूजर इंटर फेस फॉण्ट के तौर पर डिजाइन किया गया है। यह विंडोज़एक्सपी तथा इसके उत्तरोत्तर संस्करणों (विंडोज़ विस्ता, विंडोज़ ७ आदि) में इण्डिकटैक्स्टके वैकल्पिक समर्थन हेतु उपलब्ध करवाया गया है। यह देवनागरी लिपि में लिखी जाने वाली सभी भाषाओं जैसे हिन्दी, मराठी, नेपाली तथा संस्कृत हेतु विंडोज़ का डिफॉल्ट फॉण्ट है। यह माइक्रो सॉफ्ट कॉर्पोरेशन के द्वारा विकसित तथा मैण्टेन किया जाताहै।*[10]*

B. *Arial Unicode MS: It is one of the font available with new version of windows office but not available for free, so link of this is not available on any website.*

C. *Kurti dev font: It is the most widely used font to type Hindi and it is non unicodefont. It is famous even after the development of unicodefonts.*

Other available fonts are Raghu font, lohit font, sidhant font etc.

VIII. FONT CONVERTER TOOLS

Font converters are available online as well as offline, they are used to convert fonts. Some of the online and offline font converters for Hindi are the following[1]:

A. *Online font converter [11]: Itisvery easy and simple to convert Krutidev010 to Unicode. Select source font to target font from main menu, paste the source text into top side text box and press convert: Krutidev010 to Unicode button for conversion. Save this converted documents in two different formats like .doc & .txt. No extra download or installation needed for Krutidev010 to Unicode conversion.*

B. *4CGandhi ChankyaKruti Dev Unicode Free Hindi Font Converter*

C. *TBIL Data Converter: Transliteration between data in font/ASCII/Roman format in Office documents into a Unicode form in any of 7 Microsoft-supported Indian languages.*

D. ISCII plug-in for viewing text into Devanagari fonts[12]: It can be used to view the texts in Indian script of your choice. It is available for free download under GPL. Language Technologies Research Centre, IIIT, Hyderabad, India has developed this plug-in.

Other tools used for font conversion are Prakhar Devanagari font Parivartak, Font suvidha 5.0 etc.

IX. SCRIPT CONVERTER TOOLS

Script converter tools are available in both modes means online as well as offline. Some of the online and offline script converter tools are discussed below [1]:

A. *Sanscript[13]: It is an online transliterator. All modern Indian scripts are supported. Sanscript supports the full ITRANS standard for Sanskrit and Devanagari. It is capable of processing large texts like the Bhagavad Gita within one second, and it has support for rarer schemes like SLP and the National Library at Kolkata romanization. The tool is meant for Sanskrit; it has poor to nonexistent support for other languages.*

B. *Akshramukha: It is an online script converter and it is available as app also for mobile users.*

C. *Other online script converters are: Girgit, Online interface to iTrans, ICU transform Demo and many more.*

D. *AksharbBrij: It is one of the Offline script converters. It is a comprehensive open source Devanāgarī and Indic script conversion tool ; Akshara Bridge converts between several kinds of text that represent Devanāgarī, romanizations of Devanāgarī (DevLys, 10 Kruti Dev types, Krishna, Agra, iTrans, HK and many more) , and other related scripts of India and southeast Asia (Bengali, Oriya, Malayalam etc).*

E. *Transliteration Tool For Windows : It Supports Transliteration from Hindi to Urdu and Punjabi to Urdu.*

F. *XlitHindi : It is an English to Hindi transliteration extension for OpenOffice Writer*

X. OTHER TOOLS HINDI VERSION

Hindi content users are increasing therefore some popular softwares launch their Hindi versions or their Hindi softwares to lure Hindi content users. Some popular softwares are as follows [1]:

A. *BOSS: Bhartiya operating system solution yaboss*

B. *Bhartiya open office*

C. *Indic zoomla*

D. *Moodle*

E. *Livejournal*

F. *Worldpress etc.*

XI. CONCLUSION

The paper reviews tools and techniques available for Hindi language and Hindi content users are

increasing at a rapid rate. Therefore interface of Hindi with technology is also on verge. All Softwares or tools available in Hindi are not accumulated in the paper. Hindi softwares are start from the basic input tools and now it reaches to complex concepts like artificial intelligence, natural language processing and neural networks also. Natural language processing have already started in Hindi, even Indic libraries are started to set up. Python function is there to transliterate Devanagari and deep CNN Devanagari classifier came into existence. Due to rapid increase in Hindi content users on internet software, tools and techniques designing for Hindi also on boom. In future appreciably preface of computer and technology is expand in Hindi language.

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