Multilingual and Mixed Input Method with Automated Identification and Correction

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Nowadays, the need of bilingual speaking and typing increases due to globalization. In countries where people speak non-Latin languages, it requires users to switch IME (input method editor) to type a bilingual article by pressing extra keystrokes. However, it's a time-consuming and error-prone measure. Hence, a model that switches IME automatically will come in handy. To determine the output without changing the users' typing habits, we detect the boundaries built when typing and viewing them as delimiters of input string. In addition, we access the corresponding data in a trie since it stores a dynamic set and associative array. After a string is inputted, we cut the data based on the length of input string, and then visit those leaves which are same as the input. To prove that the proposed method is practicable, we conduct 3 experiments to test it: typing accuracy, maximum speed and speed improvement. Take Spanish for example, the accuracy is 95.85% based on 60 articles whose quantities are 55439 words with 52.33% Spanish. For maximum speed, 199.4 words per minute in Spanish is fast enough for an average person to type fluently. In speed improvement, the average of the improvement is , which can save considerable time for typing with proposed method. This study shows that proposed method is feasible for most languages. We have practiced 7 IMEs of 5 languages for example and all experiments and user feedbacks shown positive.

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