A Neural Network based Method for Recognition of Handwritten English Pitman’s Shorthand

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Abstract

Pitman Shorthand method of documenting is normally practiced by stenographers to take dictation at speaking speed invented by Sir Isaac Pitman in 1837. Special graphical symbols are used in this method of representing phonetic compositions of the dictated text for certain interval. This shorthand representation itself is a compressed and encrypted format of the English text. The Pitman Shorthand Language (PSL) has the practical advantage of high speed of recording, more than 120–200 words per minute, because of which it is universally acknowledged. This recording medium has its continued existence in spite of considerable developments in speech processing systems, which are not universally established yet. In this method of documenting, speech is directly converted into phonetic strokes, where each phonetic stroke is a composition of consonants and vowels. These consonants are called consonant primitives or simply primitives. In order to exploit the vast transcribing potential of PSL a new area of research on automation of PSL processing is conceived. In this work, the Neural Network Classifier for recognition of PSL at word level is presented. All the activities such as preprocessing of data (image cropping, resizing and implementations) have been carried out using MATLAB. As per this experiment, 94% recognition accuracy is achieved.
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Index Terms

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Keywords
Pitman's Shorthand  Neural Network Classifier  Hierarchical Centroid