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Pattern Recognition Based on Simulation of Chemical Senses (SCS)

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Abstract : No AI-complete system can model the human brain or behavior, without looking at the totality of the whole situation and incorporating a combination of senses. This paper proposes a Pattern Recognition model based on Simulation of Chemical Senses (SCS) for separation and classification of sign language. The model based on human taste controlling strategy. The main idea of the introduced model is motivated by the facts that the tongue cluster input substance into its basic tastes first, and then the brain recognizes its flavor. To implement this strategy, two level architecture is proposed (this is inspired from taste system). The separation-level of the architecture focuses on hand posture cluster, while the classification-level of the architecture to recognizes the sign language. The efficiency of proposed model is demonstrated experimentally by recognizing American Sign Language (ASL) data set. The recognition accuracy obtained for numbers of ASL is 92.9 percent.

Keywords : artificial intelligence, biocybernetics, gustatory system, sign language recognition, taste sense
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