Shape Understanding System: the Linguistic Abilities to Communicate

Zbigniew Les
Magdalena Les
Queen Jadwiga Research Institute of Understanding, Australia
(e-mail: zles@qjfpl.org)

Abstract

The aim of this research is to provide the system of shape understanding (SUS) with abilities to understand the speech, to be able to communicate with another system (robot) or to express the visual perceptual data in the form of the linguistic expressions. In the SUS speech understanding module converts speech signal into the stream of words and next into internal representation of the SUS. The perceived object is interpreted and this interpretation is translated into the sentence that describes the result of the perception, and next into the speech signal. The interpretation involves understanding the context and attaching an appropriate meaning to the perceived object. All communication is performed in one of the natural languages e.g. Polish, English. Main novelty of this research is that the perceptual data is interpreted in the terms of the shape classes. This approach makes it possible to relate the linguistic expression to the visual concept and interpret the visual data in the terms of visual categories.

KEYWORDS: shape understanding, the explanatory expert, the naming expert