A spatial convexity descriptor for object enlacement

Sara Brunetti*[1], Péter Balázs*[2], Péter Bodnár*[2], and Judit Szűcs*[2]

[1]Dipartimento di Ingegneria dell'Informazione e scienze matematiche [Siena] – Italy
[2]University of Szeged – Hungary

Abstract

In (Brunetti et al.: Extension of a one-dimensional convexity measure to two dimensions, LNCS 10256 (2017) 105–116) a spatial convexity descriptor is designed which provides a quantitative representation of an object by means of relative positions of its points. The descriptor uses so-called Quadrant-convexity and therefore, it is an immediate two-dimensional convexity descriptor. In this paper we extend the definition to spatial relations between objects and consider complex spatial relations like enlacement and interlacement. This approach permits to easily model these kinds of configurations as highlighted by the examples, and it allows us to define two interlacement descriptors which differ in the normalization. Experiments show a good behavior of them in the studied cases, and compare their performances.

*Speaker