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An object indexing methodology as support to object recognition

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Abstract: This paper presents an object recognition methodology which uses a step-by-step discrimination process. This process is made possible by the use of a classification structure built over examples of the objects to recognize. Thus, our approach combines numerical vision (object recognition) with conceptual clustering, showing how the latter helps the former, giving another example of useful synergy among different AI techniques. It presents our application domain: the recognition of road signs, which must support semi-autonomous vehicles in their navigational task. The discrimination process allows appropriate actions to be taken by the recognizer with regard to the actual data it has to recognize the object from: light, angle, shading, etc., and with regard to its recognition capabilities and their associated cost. Therefore, this paper puts the emphasis on this multiple criteria adaptation capability, which is the novelty of our approach.

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