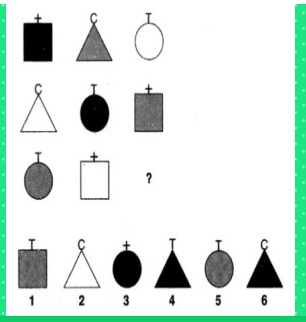
Computational intelligence Society

Home of Neural Networks, Fuzzy Systems and Evolutionary Computation



IEEE Lunchtime Lecture with Dr Zbigniew Les

WEDNESDAY, 9 MAY 2007

Building a Machine with Visual Thinking Capabilities

ABSTRACT: This talk is based on the book prepared for Springer-Verlag. In this talk the new results of the research on visual understanding will be presented. A short description of the shape understanding method will be given. The basic terms of the proposed method will be briefly described. The shape categories and categories of the visual object will be briefly described in the context of the visual thinking and visual understanding process. The shape categories which are basic elements of the visual concept play a big role in visual problem solving and naming process. Categories of the visual object represented in the form of the categorical chains are used during concept formation and understanding of the perceived object. Thinking and visual thinking will be described in the context of the philosophical and psychological investigations and the existing systems in the area of AI and robotics that could be called "thinking machines" will be briefly described. The visual thinking as a part of the thinking process will be described in terms of the reasoning process, the visual reasoning process, visual transformations and the visual analogical reasoning. Visual transformations and the visual analogical reasoning that are based on the categorical chain will be described and connection between visual understanding and visual thinking will be briefly discussed. Application of the new method in solving the visual IQ test and other selected problems will be also presented.

SPEAKER: Zbigniew Les, Ph.D. - has graduated from AGH (M.Sc. and Ph.D.), Cracow, Poland and The University of Melbourne (M.Sc.). During his scientific carrier in Poland and next in Australia, he conducted research in the area of mathematical modeling, pattern recognition, image processing and the development of the intelligent system for object recognition. He was involved in research on aesthetic evaluation of the pictures, pioneering application of the image understanding approach to aesthetic evaluation. Working as a senior software engineer at Melbourne University he was also involved in designing and implementation of the scientific software. He continues his research in the development of the intelligent system (the System of Shape Understanding) which is the first attempt to build the system with visual thinking capabilities. He is an author of more than 60 scientific papers. He is a member of IEEE. For his scientific achievements Dr Les was included in 'Who is Who' in the years 2003, 2004 and 2006. He is a director of the Queen Jadwiga Foundation and a director of the Queen Jadwiga Research Institute of Understanding (http://www.qifpl.org/).

IEEE LUNCHTIME LECTURE

Venue: Room 136, Building 72, Monash University, Clayton, Victoria

Time: 1:00pm refreshments for 1:10pm start (until 2:00pm)

Date: Wednesday, 9 May 2007

Register at www.ieeevic.org

There is no admittance fee for this talk and non-IEEE members are also welcome.

Contact Information:
Dr Nallasamy Mani, IEEE Computational Intelligence Society-Victorian Chapter Chair, Ph: 9905 1895, n.mani@eng.monash.edu.au
Robert Slaviero, IEEE Computational Intelligence Society-Victorian Chapter Vice-Chair, Ph: 9881 9900, r.slaviero@ieee.org,

IEEE Victorian Section