University of Pavia

Ph.D. School of Electrical and Electronics Engineering and Computer Science

SEMINAR

Recent activities of Mathematical Methods for Sensor Information

Prof. Kiril Alexiev
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25/10/2018 – h. 9:00
Aula Seminari ex Elettronica

Part 1: Industrial applications of acoustic camera
Acoustic camera is a complex sensor, integrating information received from an image sensor with array of microphones. It provides noise sources identification in the range 10 Hz - 20 kHz in two modes of operation: beam-directed and acoustic holography modes. The presentation describes several interesting industrial applications of sensor for acoustic analysis.

Part 2: Neural Network and Brain activity modeling in cognitive tasks. Eye tracker data processing
The development of biologically plausible model of voluntary saccadic eye movements of human during resolving of visual tasks is the main objective in a running project of a team from two Bulgarian Academy institutions. The presentation concerns preliminary processing of information receiving from eye tracking sensor and two types if inertial sensors - gyroscopes and accelerometers in order to compensate head movement in experiments.

Part 3: Neural Network and Brain activity modeling in cognitive tasks. Neural Network architecture analysis
The development of biologically plausible model of voluntary saccadic eye movements of human during resolving of visual tasks is the main objective in a running project of a team from two Bulgarian Academy institutions. An analysis of existing artificial neural architectures is presented in order to be chosen the correct one for modelling of brain visual tract.

Bio: Assoc. Prof. PhD Kiril Alexiev is head of the Department of Mathematical Methods for Sensor Information Processing of the Institute of Information and Communication Technologies of the Bulgarian Academy of Sciences in Sofia, Bulgaria. He is member of IEEE, of the Bulgarian Automation and Information Systems Society and of the Union of Bulgarian mathematicians. He received his Ph.D. in 1997 discussing a thesis on "Radar and Navigation systems". His professional experiences and research interests include: computer aided design of digital circuits, multi-sensor multi-target tracking, data and information fusion, sensor networks, image processing and super-resolution. He is involved in international and national projects. http://mmsip.bas.bg/

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Seminar in English
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