Government of India
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Inverse problems in fuzzy approximation spaces with applications in computer vision

Overview

The rapid development of computer technology in recent decades and advent of digitalisation in almost all sectors of human activity saw the simultaneous increase in the demand for methods that facilitate the analysis and processing of large data files. With the exception of classical methods based on standard concepts offered by basic courses on statistics and probability, more sophisticated techniques have been developed and begun to be promoted based on the methods of computer intelligence and using mathematical concepts that allow different types of uncertainty and data to be captured.

The proposed lecturing coarse is foused on new methods of solving selected inverse problems. The latter belong to the most important mathematical problems in science and mathematics, as they discover parameters that we cannot directly observe. Inverse problems have applications in optics, acoustics, signal processing, medical imaging, computer vision, remote sensing, machine learning and many other fields. The discussed methods are based on various fuzzy techniques that include fuzzy relation calculus, fuzzy transforms, fuzzy mathematical morphology and fuzzy conceptual analysis. We plan to give an exaustive introduction and theoretical explanation to the proposed technique as well as to the number of important applications.

Course Schedule	**October 23-27, 2017** Number of participants for the course will be limited to fifty.
You Should Attend If…	• Executives, engineers and researchers from manufacturing, service and government organizations including R&D laboratories. • Student at levels (M.Sc./M.Tech./Ph.D.) or Faculty from academic institutions.
Fees	**One-Time GIAN Registration:** Please visit http://www.gian.iitkgp.ac.in/GREGN/ and register by paying Rs. 500/- (those who have already been paid, need not pay again).The participation fees for taking the course is as follows: Participants from abroad: US $400 Industry/ Research Organizations: Rs. 10000 Academic Institutions: a) Institute Faculty: Rs. 5000 b) Student: Rs 3000 The above fees include all instructional materials, computer use for tutorials and assignments (if any). The participants will be provided with accommodation on payment basis.

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The Faculty

Prof. Irina Perfilieva is currently working as Head of the Theoretical Research Department, Centre of Excellence IT4Innovations – division of University of Ostrava – Institute for Research and Applications of Fuzzy Modeling, Czech Republic. In past, She has also served as a Professor in Moscow State Academy of Informatics, Russia and Czech Technical University, Prague. Prof. Irina, a Ph.D. from Moscow State University, Russia, is working as Area Editor and member of Advisory Board in IEEE Transactions on Fuzzy Systems, Fuzzy Sets and Systems, Iranian Journal of Fuzzy Systems and International Journal of Computational Intelligent Systems.

Dr. S.P. Tiwari is currently working as an Associate Professor, Department of Applied Mathematics, Indian Institute of Technology (Indian School of Mines), Dhanbad. Dr. Tiwari, a Ph.D. from Banaras Hindu University, Varanasi, is working in the areas of use of topology and category theory in fuzzy automata theory and *F*-transforms.

Course Coordinator

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