

Third International Conference
Modelling and Development of Intelligent Systems
October 10 - 12, 2013
"Lucian Blaga" University
Sibiu - Romania

Plenary Lecturer III

Scheduling Algorithms. A review

Ioana Moisil

"Lucian Blaga" University of Sibiu
"Hermann Oberth" Faculty of Engineering
Sibiu, ROMANIA
E-mail: im25sibiu@gmail.com

Scheduling is one of the most complex topics that appear in almost all fields of activity, from scientific research to industrial applications. As most of the complex problems, scheduling is still a challenge for researchers, especially for those involved in optimization studies. In this contribution, after introducing the classification of scheduling problems, I will briefly present classical scheduling algorithms for solving single machine problems, parallel machine problems, and shop scheduling problems. Aspects concerning polynomial algorithms, procedures based on dynamic programming, combinatorial optimization and computational complexity will also be discussed. In the last part of the paper I will present some metaheuristic algorithms that are widely used in solving scheduling problems. The results of a computational study using metaheuristics i.e. an adaptive Ant Colony Optimization algorithm for the Resource-Constrained Project Scheduling will also be presented.

Brief Biography of the Speaker: Ioana Moisil received the M.Sc. in Mathematics at the University of Bucharest, in 1971, the scientific grade in Statistical, Epidemiological and Operation Research Methods Applied in Public Health and Medicine at the Universite Libre de Bruxelles, in Belgium, in 1991 and the Ph.D. in Mathematics at the Romanian Academy in 1997. Work places: the National Institute for Research & Development in Informatics - I.C.I (1971-1986), Carol Davila Faculty of Medicine Bucharest – department of Biophysics, CCSSDM Center of the Ministry of Health. At present she is a full-time Professor and a Senior Researcher at the Department of Computer Science and Automatic Control – Faculty of Engineering at the "Lucian Blaga" University of Sibiu. She is the author/co-author of fourteen books and over 150 scientific papers. Her scientific interests include intelligent systems, healthcare telematics, web technologies, data-mining, e-learning, modelling and simulation, uncertainty management, human-computer interaction. Professor Moisil participated in several EU funded projects as project manager for the national partner (Telenurse ID ENTITY, MGT, PROPRACTITION, PRO-ACCESS), in Tempus projects and in national funded projects as research manager and software development coordinator (INFOSOC – eUNIV, AMTRANS – eCASTOR, INFOSOC - e-Scribe, INFOSOC – DANTE, e-EDU-Quality, eTransMobility, CNCSIS 2007-code 33, Studies on multivariate interpolation, polinomial classifiers and applications, CNCSIS 2007 – cod 1502, Aspects concerning the psycho-cognitive abilities of artificial intelligent agents and applications in ITC based education). Ioana Moisil is a member of EARLI (European Association for Research in Learning and Instruction), she is Romanian representative in the IMIA SIG and EFMI WG5 Nursing Informatics, honorary member of the Bohemian Medical Association J.E.Purkyne of Bio-engineering and Medical Informatics, member of the ISCB – International Society for Clinical Biostatistics, a member of the National society of Medical Engineering and biological Technology, of the Romanian General Association of Engineers, member of the IITM- International Institute of Tele-Medicine and of the Romanian Society of Mathematics Sciences. She is vice-president of the Romanian Medical Informatics Society; vice-president of the HIT Foundation for Health Informatics and Telematics and a member of RoCHI-ACM. Professor Moisil is taking part in several international peer-review committees and conferences scientific boards.