EUSFLAT
EUROPEAN SOCIETY FOR FUZZY LOGIC AND TECHNOLOGY

NEWSLETTER

European Society for Fuzzy Logic and Technology
Vol.3, No. 2, September 2007

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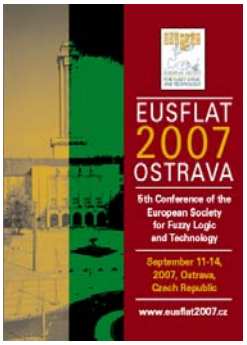
Society Briefs

LAST CHANCE: EUSFLAT 2007 Conference



This is the last call for participation in the EUSFLAT 2007 Conference that takes place September 11–14, 2007, in Ostrava, Czech Republic. Around 180 participants are expected to come and to present their latest research advances. An impressive list of world-known invited speakers and great social events complement this unique conference. If you are not yet registered, you still have the opportunity to go there and register on-site. Check out http://www.eusflat2007.cz/ for more information.

EUSFLAT General Assembly

This year's annual general assembly takes place on Thursday, September 13, 2007, 7:00pm, on the occasion of EUSFLAT 2007. The exact location of the meeting will be announced in the program of EUSFLAT 2007. All members of EUSFLAT (also those who paid their membership via their conference registration) are cordially invited! Note that, on this occasion, a new EUSFLAT board has to be elected. All members of EUSFLAT (also the new ones as noted above) are entitled to participate in the election. Members who are not participating in the assembly may participate in the election by proxy voting (which requires a written authorization of the voter; the maximum number of proxies for one single person is five).

News Regarding Payment of Membership via Conference Registration

Since 2001, EUSFLAT has offered the possibility to pay EUSFLAT membership dues via the registration fee of EUSFLAT conferences. From this year on, the extra charge for non-members of € 50 will entitle new members for a 15-month membership (compared to a membership for the remaining three months of a year in previous years). So, colleagues who have paid a non-member fee for EUSFLAT 2007 will be members throughout 2008 without any extra charge and any need to renew at the beginning of 2008.

IFSA-EUSFLAT 2009

We are proud to announce that the 6th EUSFLAT Conference will be organized jointly with the 13th IFSA World Congress in Lisbon, Portugal. The tentative date is July 19–23, 2009. To organize our EUSFLAT Conference jointly with an IFSA World Congress provides our society with the unique opportunity to increase awareness of our society and its achievements in the international fuzzy logic research community outside Europe.

Society Briefs (cont'd)

Honor for Prof. Janusz Kacprzyk

We are glad to announce that our renowned member and IFSA President, Prof. Janusz Kacprzyk, has been elected President of the Polish Society for Operational and Systems Research.
We cordially congratulate!

Candidature for EUSFLAT Board 2007–2009

There is one candidature for the EUSFLAT Board for the period 2007–2009:

Board of directors:

President:
Ulrich Bodenhofer, Johannes Kepler University, Linz, Austria
Vice-President:
Lluís Godo, Institut d'Investigació en Intel·ligència Artificial, Bellaterra, Spain
Secretary:
Irina Perfilieva, University of Ostrava, Ostrava, Czech Republic
Treasurer:
Jorge Casillas, University of Granada, Granada, Spain

Special Responsibilities:

Web:
Ulrich Bodenhofer, Johannes Kepler University, Linz, Austria
Members Management:
Thomas Vetterlein, European Centre for Soft Computing, Mieres, Spain
Mathware & Soft Computing:
Juan Luis Castro, University of Granada, Granada, Spain
Newsletter:
Vicenç Torra, Institut d'Investigació en Intel·ligència Artificial, Bellaterra, Spain
Grants:
Bernard De Baets, Ghent University, Gent, Belgium
Working groups:
Eyke Hüllermeier, Philipps-Universität, Marburg, Germany

EUSFLAT Student Grants in 2007

4th International Summer School on Aggregation Operators (AGOP 2007), Gent, Belgium, July 9–14, 2007:

1. De Pretis, Francesco (Italy)
2. Manzi, Maddalena (Italy)
3. Mihailovic, Biljana (Serbia)
4. Nin, Jordi (Spain)

1st Summer Course on Future Directions in Soft Computing, Mieres, Spain, July 9-13, 2007:

1. Costin, Ciprian Constantin (Romania)
2. Moreno Navas, Juan (Spain)
3. Jiménez Gómez, David (Spain)

5th Conference of the European Society for Fuzzy Logic and Technology, Ostrava, Czech Republic, September 11-14, 2007:
1. Bradley, Jeremy (USA)
2. Fiot, Céline (France)
3. Grbic, Tatjana (Serbia)
4. Iyer, Vasanth (India)
5. Lebedeva, Olga (Latvia)
6. Limberg, Julia (Germany)
7. Salimi Khorshidi, Gholamreza (Iran)

EUSFLAT Working Group on Data Mining and Learning (DAMI)

The EUSFLAT Working Group on Data Mining and Learning (DAMI) has a new, third coordinator, Dr. Plamen Angelov from Lancaster University, UK (http://www.lancs.ac.uk/staff/angelov) who will overlook the development of the newly emerging area of *Evolving Fuzzy Systems*.

What Evolving Fuzzy Systems (EFS) means?
This new and dynamic branch of fuzzy systems theory and applications has emerged as a result of the efforts to address some new challenges. The problem of automatic design of fuzzy systems for modeling, classification, time-series prediction, regression, clustering etc. from data has been successfully addressed in the off-line case by a range of techniques such as gradient-based (neuro-fuzzy approach, ANFIS), genetic or more generally evolutionary algorithms based (nowadays well established GFS), using partitioning by clustering or experts and learning by least squares techniques etc. A range of new challenges appear during the last decade or so, which require completely new approaches. We are in

the midst of an information revolution witnessing an exponential growth of the quantity and the rate of appearance of new information by; Internet users, consumers, finance industry, sensors in advanced industrial processes, autonomous systems, space- and aircrafts etc. The new challenges that cannot be successfully addressed by the existing techniques can be summarized as follows: i) to cope with huge amounts of data; ii) to process streaming data on-line and in real-time; iii) to adapt to the changing environment and data pattern by systems (models, classifiers, predictors etc. that have flexible, open, expandable, as we say, 'evolving' structure); iv) to be computationally efficient (that means to use recursive, one-pass, non-iterative approaches); to preserve the interpretability and transparency in a dynamic sense. We need efficient approaches to deal with data streams, not just with batch sets of data, to detect, react and take advantage of concept shift and drift in the data streams. We need efficient collaborative and interactive schemes for a range of applications in process industry (for self-calibrating, self-maintaining intelligent sensors of new generation), in autonomous systems and robotics (for systems that have self-awareness, re-planning and knowledge accumulation capabilities), in multimedia and biomedical applications to name the few.

How EFS started?
The link with the well established domain of Genetic Fuzzy Systems (GFS) is very intensive – the very existence of EFS as organizational entity was closely linked to the GFS Task Force (TF) of IEEE, Chaired by Dr. Oscar Cordon, who helped throughout the process of establishing this newly emerging area. The next Workshop (The 3rd International Workshop on Genetic and Evolving Fuzzy Systems) of the TF is planned for March 2008 near Dortmund, Germany and will cover both topics.

How 'evolving' relates to 'evolutionary'?
Regarding the name 'evolving' – there are often confusions (perhaps similarly to the confusion of a layman who hear the term 'fuzzy' for the very first time… Evolutionary Algorithms has been well established now and they are related to computational techniques for 'directed' random search of a solution to a loosely formulated optimization problem that borrow from the Nature the concept of genetic or population evolution based on computational mechanisms that mimic (imitate) *mutation*, chromosomes *crossover*, *reproduction*, *selection*. The definition of '*genetic*' is (according to the Oxford Dictionary, p.358) a 'branch of biology dealing with the heredity, the ways in which characteristics are passed on from parents to off-springs'. Respectively, '*evolutionary*' is (p.294) 'development of more complicated forms of life (plants, animals) from earlier and simpler forms'.

EFS deal with fuzzy rule-based systems that are '*gradually developing*'. The definition of evolving is (p.294) 'unfolding; developing; being developed, naturally and gradually'. If compare the two, one can see that *genetic/evolutionary* is related to population of individuals and parents-to-offspring heredity, *evolving* is applicable to individuals' self-development (known in humans as autonomous mental development). '*Evolving'* relates more to *learning from experience*, *gradual* change, knowledge generation from routine operation, rules extraction from the data. While a *genetic/evolutionary* fuzzy rule-based system generates new rules as a *crossover* or *mutation* of previous rules driven by a 'directed' random process, EFS learn new rules from new data *gradually* preserving/inheriting the rules learned already in a very much similar way to the way individual people (especially children) learn in their life. Similarly to the human, EFS can be initiated by an initial rule-base or can start learning 'from scratch'. This paradigm was applied to model identification, time-series prediction, classification, clustering, regression, fault detection and a range of industrial applications in car industry, robotics, petro-chemical process industry, telecommunication etc. Note that evolving is not just on-line or incremental. The key difference is that in *evolving* systems the structure of the system is open, expandable, flexible.

The research topic of *evolving* fuzzy systems (EFS) emerged during the last 5 years or so as a collective effort of a relatively small number of active researchers. It has now been recognized through a range of activities, such as: i) IEEE International Symposium on Evolving Fuzzy Systems 2006 (Proceedings published by IEEE Press); ii) a special issue of IEEE Transactions on Fuzzy Systems, 2007 with over 20 papers received; iii) an edited book by John Wiley, 2008; iv) a large number of special sessions and Tutorials at leading IEEE Conferences; v) a new journal by Springer to be launched 2009; v) a growing number of publications, patents, and industrial applications in this emerging area of research.

All researchers who are interested and active in this or closely related topics are encouraged to contribute to the activities of the DAMI WG on EFS that will follow.

Plamen Angelov, 24 June 2007, Lancaster, UK

Launching of the International Journal of Computational Intelligence Systems.

An international journal on computational intelligence research, developments and applications.
Editor-in-chief. Prof. Da Ruan, druan@sckcen.be

Aims and scope. The International Journal of Computational Intelligence Systems aims at covering state-of-the-art research and development in all fields where computational intelligence is applied. The journal publishes original papers on foundations and new developments of computational intelligence with an emphasis on applied research, including current and potential applications of methods and techniques derived from computational intelligence research. The journals seeks original contributions in the area of applied computational intelligence research in general, with a focus on applications using new, emerging technologies originating from computational intelligence research. Applications may range from information technology and (nuclear) energy supply to environmental, societal and security related topics. Papers submitted to International Journal of Computational Intelligence Systems will all be double peer reviewed. Recognizing the importance of a fast publication of papers, the journal commits is committed to publishing a paper within 3 months after submission (unless major revisions of the paper are needed). For this, we have set an average review time of 10 weeks for a paper. Also, the journal applies the principle of 'rolling publication', so as soon as a paper has been accepted it will be published on-line.

Topics to be considered include, but are not limited to:
Methodologies: Fuzzy logic * Neural networks * Genetic algorithms * Probabilistic computing * Hybrid methods * Chaos theory * Rough set theory * Evidence theory * Interactive computational models * AI and expert systems * Machine learning
Domains of application: Decision support systems * Process and system control, System identification and modeling, and Optimization * Signal or image processing, Pattern recognition * Condition monitoring, Fault diagnosis, and Systems integration * Internet tools, Human-machine interface * Time series prediction, Noise analysis, Real time systems * Robotics * Virtual reality, Telecommunications * Consumer electronics, Industrial electronics, (nuclear) Power and energy * Data mining, Data visualization, Intelligent information retrieval, and Autonomous reasoning * E-science and technology * Risk analysis and safety related issues

First issue due for October 2007

Original research papers within the scope of IJCIS are invited for submission to the editor-in-chief: Prof. Da Ruan, email: druan@scken.be
Link: http://www.atlantis-press.com/publications/ijcis

PhD Dissertations

Koen C. Maes
Rotation-Invariant T-Norms

Abstract: Increasing $[0, 1]^n \rightarrow [0, 1]$ functions are used in many fields of science as tools to aggregate multiple numerical inputs into a single numerical output. Usually aggregation functions satisfy several additional properties such as commutativity, associativity, the existence of a neutral element, ... To gain a better insight into the geometrical structure of these aggregation functions some dimensional reduction can be performed which allows to study their properties in lower dimensional spaces. Instead of using partial functions every binary aggregation function F can also be described by means of its contour lines, i.e., the upper, lower, right and left limits of the intersections of its graph with planes parallel to its domain $[0, 1]^2$. As the height of the intersecting plane is fixed, contour lines are $[0, 1] \rightarrow [0, 1]$ functions. Most properties of F can be described in terms of contour lines.

The first focus of the thesis lies on the symmetry aspects of monotone $[0, 1] \rightarrow [0, 1]$ unctions. The introduction of orthosymmetry allows to more profoundly describe the class of monotone $[0, 1] \rightarrow [0, 1]$ bijections. Also, the invariance and orthosymmetry aspects of more general monotone $[0, 1]^n \rightarrow [0, 1]$ functions are investigated.

The second part of the thesis provides a more profound study of associative functions. All the characteristic properties of uninorms are expressed in terms of contour lines. The continuity of a contour line influences drastically the structure of a uninorm. The companion and zooms are introduced as additional tools to lay bare the geometrical structure of left-continuous t-norms. New methods for decomposing and constructing rotation-invariant t-norms are presented.

The new knowledge on the structure of rotation-invariant t-norms allows a comparative study between the disjunctive and conjunctive fuzzified normal forms. A system of functional equations turns up if some functional independence of the difference between both fuzzified normal forms is demanded. To solve this system De Morgan triplets are used that contain a left-continuous (rotation-invariant) t-norm.

Advisors: Prof. Bernard De Baets, Ghent University, Gent, Belgium

Bibliographic Information: The results of the thesis have been published in several journal papers:

[1] K. Maes and B. De Baets, Facts and figures on fuzzified normal forms, *IEEE Trans. on Fuzzy Systems* 13 (2005) , 394–404.
[2] K. Maes, B. De Baets and J. Fodor, The unique role of the Łukasiewicz-triplet in the theory of fuzzified normal forms, *Fuzzy Sets and Systems* 153 (2005), 161–179.
[3] K. Maes and B. De Baets, Rotation-invariant t-norm solutions of a system of functional equations, *Fuzzy Sets and Systems* 157 (2006), 373–397.
[4] K.C. Maes and B. De Baets, A contour view on uninorm properties, *Kybernetika* 42 (2006), 303–318.
[5] K.C. Maes, S. Saminger and B. De Baets, Representation and construction of self-dual aggregation operators, *Eur. J. Oper. Res.* 177 (2007), 472–487.
[6] K.C. Maes and B. De Baets, Negation and affirmation: The role of involutive negators, *Soft Computing* 11 (2007), 647–654.
[7] K.C. Maes and B. De Baets, On the structure of left-continuous t-norms that have a continuous contour line, *Fuzzy Sets and Systems* 158 (2007), 843–860.
[8] K.C. Maes and B. De Baets, Orthosymmetrical monotone functions, *B. Belg. Math. Soc.-Sim.* 14 (2007), 99–116.
[9] K.C. Maes and B. De Baets, The triple rotation method for constructing rotation-invariant t-norms, *Fuzzy Sets and Systems* 158 (2007), 1652–1674.

Book announcements and reviews

G. Beliakov, A. Pradera, T. Calvo
Aggregation Functions: A Guide for Practitioners.
Springer, 2007. 360 pages. ISBN-978-3-540-73720-9.
Link: http://www.springer.com/978-3-540-73720-9

Description: Aggregation of information is of primary importance in the construction of knowledge based systems in various domains, ranging from medicine, economics, and engineering to decision-making processes, artificial intelligence, robotics, and machine learning. This book gives a broad introduction into the topic of aggregation functions, and provides a concise account of the properties and the main classes of such functions, including classical means, medians, ordered weighted averaging functions, Choquet and Sugeno integrals, triangular norms, conorms and copulas, uninorms, nullnorms, and symmetric sums. It also presents some state-of-the-art techniques, many graphical illustrations and new interpolatory aggregation functions. A particular attention is paid to identification and construction of aggregation functions from application specific requirements and empirical data. This book provides scientists, IT specialists and system architects with a self-contained easy-to-use guide, as well as examples of computer code and a software package. It will facilitate construction of decision support, expert, recommender, control and many other intelligent systems.

This book is written for: Researchers, Engineers, Graduate Students in Computational Intelligence Software Engineering, Computer Science

Table of contents: Introduction.- Averaging Functions.- Conjunctive and Disjunctive Functions.- Mixed Functions.- Choice and Construction of Aggregation Functions.- Interpolatory Type Aggregation Functions.- Other Types of Aggregation and Additional Properties.

H. B. Mitchell
Multi-Sensor Data Fusion. An Introduction.
Springer, 2007. 282 pages. ISBN-978-3-540-71463-7.
Link: http://www.springer.com/west/home/generic/search/results?SGWID=4-40109-22-173737011-0

Description: This textbook provides a comprehensive introduction to the theories and techniques of multi-sensor data fusion. It is aimed at advanced undergraduate and first-year graduate students in electrical engineering and computer science, as well as researchers and professional engineers. The book is intended to be self-contained. No previous knowledge of multi-sensor data fusion is assumed, although some familiarity with the basic tools of linear algebra, calculus and simple probability theory is recommended.

Although conceptually simple, the study of multi-sensor data fusion presents challenges that are unique within the education of the electrical engineer or computer scientist. To become competent in the field the student must become familiar with tools taken from a wide range of diverse subjects including: neural networks, signal processing, statistical estimation, tracking algorithms, computer vision and control theory. All too often the student views multi-sensor data fusion as a miscellaneous assortment of different processes which bear no relationship to each other. In this book the processes are described using a common statistical framework. As a consequence, the underlying pattern of relationships that exists between the different methodologies is made evident.

The book is illustrated with many real-life applications and contains an extensive list of modern references. It is accompanied by a webpage (http://www.hbmitchell.com/dfusion.htm) from which supplementary material may be obtained, including support for course instructors and links to relevant Matlab code.

J. Lu, G. Zhang, D. Ruan, F. Wu
Multi-Objective Group Decision Making: Methods, Software and Applications with Fuzzy Set Techniques,
World Scientific Press, 2007. 408 pages. ISBN-13 978-1-86094-793-3, ISBN-10 1-86094-793-X.
Link: http://www.worldscibooks.com/business/p505.html

Description: This book proposes a set of models to describe fuzzy multi-objective decision making (MODM), fuzzy multi-criteria decision making (MCDM), fuzzy group decision making (GDM) and fuzzy multi-objective group decision-making problems, respectively. It also gives a set of related methods (including algorithms) to solve these problems. One distinguishing feature of this book is that it provides two decision support systems software for readers to apply these proposed methods. A set of real-world applications and some new directions in this area are then described to further instruct readers how to use these methods and software in their practice.

Key Features
• Describes a complete set of models, methods and algorithms with fuzzy set techniques not only for solving fuzzy MODM, fuzzy MCDM and fuzzy GDM problems, but also for solving general MODM, MCDM and GDM problems
• Features two decision support systems (DSSs) for a fuzzy multi-objective DSS and a fuzzy group DSS on how to apply, design and implement such kinds of DSSs in practice
• Highlights various applications of proposed decision-making methods and DSS software including power markets, team situation awareness, and logistics management from the practical point of view
• Reveals new directions of decision support systems — online customer decision support systems and perceptive decision support systems

H. Bustince, F. Herrera, J. Montero (Eds)
Fuzzy Sets and Their Extensions: Representation, Aggregation and Models,
Springer, 2007. 680 pages. ISBN-978-3-540-73722-3.
Link: http://www.springer.com/west/home/generic/search/results?SGWID=4-40109-22-173750209-0

Description: This carefully edited book presents an up-to-date state of current research in the use of fuzzy sets and their extensions, paying attention to foundation issues and to their application to four important areas where fuzzy sets are seen to be an important tool for modelling and solving problems.

The book contains 34 chapters divided into two parts. The first part is divided into two sections. Section 1 contains four review papers introducing some non standard representations that extend fuzzy sets (type-2 fuzzy sets, Atanassov's IFS, fuzzy rough sets and computing with words under the fuzzy sets perspective). Section 2 reviews different aggregation issues from a theoretical and practical point of view; this second part is divided into four sections. Section 3 is devoted to decision making, with seven papers that show how fuzzy sets and their extensions are an important tool for modelling choice problems. Section 4 includes eight papers that cover different aspects on the use of fuzzy sets and their extensions in data mining, giving an illustrative review of the state of the art on the topic. Section 5 is devoted to the emergent topic of web intelligence and contains four papers that show the use of fuzzy sets theory in some problems that can be tackled in this topic. Section 6 is devoted to the use of fuzzy sets and their extensions in the field of computer vision, suggesting how these can be an useful tool in this area.

This volume will be extremely useful to any non-expert reader who is keen to get a good overview on the latest developments in this research field. It will also support those specialists who wish to discover the latest results and trends in the abovementioned areas.

Book series announcement

We announce that a new book series has been launched, Intelligent Information Systems (World Scientific).

The series "Intelligent Information Systems" timely publishes new developments and advances in various areas of integrated intelligent and information systems. The intent is to cover theoretical foundations, innovative technologies, and emerging applications of Intelligent Information Systems, as embedded in the fields of computer science, engineering, information technology and social science. The series contains peer-reviewed original monographs, advanced text books, and occasionally well-balanced edited volumes in Intelligent Information Systems spanning the subjects of information security, business intelligence, knowledge engineering, cognitive computing, smart decision support, web intelligence and major business domains such as e-market, e-finance, e-business, e-service, e-government, e-innovation, and engineering optimization with an emphasis on current and potential applications in Intelligent Information Systems.

Contact.
Link: http://www.worldscibooks.com/series/iis_series.shtml
The book series editor:
Da Ruan, Dept. of Society and Policy Support, Belgian Nuclear Research Centre (SCK•CEN), Boeretang 200, 2400 Mol, Belgium, phone: 32-14-332207; fax: 32-14-321529: email: druan@sckcen.be and Dept. of Applied Math and Computer Science, Ghent University, Krijgslaan 281 S9, 9000 Gent, Belgium

Co-editor:
Jie Lu, Dept. of Software Engineering, Faculty of IT, University of Technology, Sydney, City campus, PO Box 123 Broadway, NSW 2007 Australia

Brief announcements

- E. Herrera-Viedma, G. Pasi, F. Crestani, (Eds.), *Soft Computing in Web Information Retrieval - Models and Applications*, Series: Studies in Fuzziness and Soft Computing 197, Springer, 2006. ISBN 3-540-31588-8.
  http://www.springer.com/west/home/engineering?SGWID=4-175-22-120133316-0
- M. Sato-Ilic, L. C. Jain, *Innovations in Fuzzy Clustering*, Series: Studies in Fuzziness and Soft Computing 205, Springer, 2006. 152 pages, ISBN 3-540-34356-3
  http://www.springer.com/west/home/engineering?SGWID=4-175-22-170209126-0
- S. Kendal, M. Creen, *An Introduction to Knowledge Engineering*, 2006. 290 pages. ISBN 1-84628-475-9.
  http://www.springer.com/west/home/computer/artificial?SGWID=4-147-22-165247224-0
- A. Gegov, *Complexity Management in Fuzzy Systems*, Series: Studies in Fuzziness and Soft Computing, Springer 211, 2007. 351 pages, ISBN 3-540-38883-4.
  http://www.springer.com/west/home/default?SGWID=4-40356-22-173676527-0
- V. Torra, Y. Narukawa, *Modeling Decisions: Information Fusion and Aggregation Operators*, Springer, 2007. 240 pages, ISBN 3-540-68789-0.
  http://www.springer.com/3-540-68789-0
- G. Beliakov, A. Pradera, T. Calvo, *Aggregation Functions: A Guide for Practitioners*, Springer, 2007. 360 pages, ISBN 978-3-540-73720-9.
  http://www.springer.com/978-3-540-73720-9
- H. B. Mitchell, *Multi-Sensor Data Fusion. An Introduction*, Springer, 2007. 282 pages, ISBN 978-3-540-71463-7.
  http://www.springer.com/west/home/generic/search/results?SGWID=4-40109-22-173737011-0
- J. Lu, G. Zhang, D. Ruan, F. Wu, *Multi-Objective Group Decision Making: Methods, Software and Applications with Fuzzy Set Techniques*, World Scientific Press, 2007. 408 pages, ISBN-13 978-1-86094-793-3, ISBN-10 1-86094-793-X
  http://www.worldscibooks.com/business/p505.html
- H. Bustince, F. Herrera, J. Montero, *Fuzzy Sets and Their Extensions: Representation, Aggregation and Models*, Springer, 2007. 680 pages, ISBN-978-3-540-73722-3
  http://www.springer.com/west/home/generic/search/results?SGWID=4-40109-22-173750209-0

Conferences Reports

Report on the First Summer Course of the European Centre for Soft Computing "Future Directions in Soft Computing"

The first Summer Course of the European Centre for Soft Computing (ECSC) under the title "Future Directions in Soft Computing" was held from July 9th until July 13th at the Scientific and Technologic Building in Mieres (Asturias), with 38 attendants. The registered group of people was composed of 27 students and 11 seniors (6 researchers and 5 employees from different companies). From the 27 students, there were 13 Spaniards and 14 foreigners. In what concerns grants, most of the students got some kind of support: EUSFLAT offered 3 registration plus accommodation grants, ECSC offered 7 registration grants itself, Mieres Town Hall offered 8 accommodation grants, and IEEE-CIS offered 5 travel grants. The summer course had an important impact in the Asturias press. In addition, evening lectures (focused on applications) were open to public.

The summer course reviewed the fundamentals of Soft Computing, described many real-world applications, and, in particular, treated new trends and future directions of the field. Participants gained insight into the potential of soft computing techniques and the state of the art in the area. To achieve this, the lecturers were selected from outstanding researchers, representatives of the different branches of Soft Computing.

The courses covered the following topics:

- Fundamentals and New Trends on Fuzzy Set Theory - Fuzzy Systems
- Fundamentals and New Trends on Evolutionary Computation
- Fundamentals and New Trends on Neural Networks
- Computing with Words and Linguistic Data Mining
- Fusion of Soft Computing Tools
- Applications of Soft Computing

And the selected lecturers were:

- Piero Bonissone (General Electric R&D)
- Christian Borgelt (ECSC)
- Oscar Cordón (ECSC)
- Francisco Herrera (University of Granada)
- Bob John (Monfort University)
- Janusz Kacprzyk (Polish Academy of Sciences)
- Frank Klawonn (University of Applied Sciences Braunschweig/Wolfenbüttel)
- Rudolf Kruse (University of Magdeburg)
- Pedro Larrañaga (University of the Basque Country)
- Claudio Moraga (ECSC)
- Enric Trillas (ECSC)

Calls for Papers

3rd International Conference on Genetic and Evolving Fuzzy Systems (GEFS'08), Witten-Bommerholz, Germany, March 4-7, 2008. Deadline: Oct 1st, 2007
http://www.gefs08.de

The past decade has witnessed a trend towards augmenting fuzzy systems with learning and adaptation capabilities. One of the most prominent approaches to hybridize fuzzy systems with learning and adaptation methods has resulted in the emergence of genetic fuzzy systems, which meld the approximate reasoning method of fuzzy systems with the adaptation capabilities of evolutionary algorithms. Another evolution-inspired paradigm, evolving fuzzy systems, emerged as a promising tool to address designing and learning fuzzy systems learning in on-line mode and in real-time. Fuzzy systems have demonstrated the ability to formalize in a computationally efficient manner the approximate reasoning typical of humans. Evolution-inspired algorithms constitute a robust technique in complex optimization, identification, learning, and adaptation problems. Their confluence leads to increased capabilities for the design and optimization of fuzzy systems. GEFS'08 will become the third workshop in a series of highly successful symposiums dedicated to serving the needs of academics and practitioners in computational intelligence. The first two productive workshops in Granada, Spain and Ambleside, UK were attended by over 60 participants. The objective of GEFS'08 is to facilitate the promotion of novel problems, research, results and future directions in the emerging area of genetic and evolving fuzzy systems. GEFS'08 will provide an opportunity to meet old friends, making new contacts and exchange ideas.

12th International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems (IPMU 2006), Málaga, Spain, June 22-27, 2008. Deadline: Dec 1, 2007
http://sevein.matap.uma.es/~aciego/IPMU08/

The IPMU Conference is organized every two years with the focus of bringing together scientists working on methods for the management of uncertainty and aggregation of information in intelligent systems. This conference provides a medium for the exchange of ideas between theoreticians and practitioners in these and related areas. As usual, the programme will include high quality keynote speakers, contributed papers and several special sessions on a wide range of topics.

Upcoming EUSFLAT Conference

- **5th Conference of the European Society for Fuzzy Logic and Technology (EUSFLAT 2007)**, Ostrava, Czech Republic, September 11-14, 2007.
http://www.eusflat2007.cz

Upcoming EUSFLAT-Endorsed Events

- **2nd International Symposium Advances in Artificial Intelligence and Applications (AAIA'07)**, Wilsa, Poland, October 15-17, 2007.
http://www.imcsit.org/?cont=6&type=page&page=5
- **French Days on Fuzzy Logic and Applications (LFA 2007),** Nîmes, France, November 22-23, 2007.
http://www.lfa2007.ema.fr/
- **9th International Conference on Fuzzy Set Theory and Applications (FSTA 2008)**, Liptovský Mikuláš, Slovak Republic, February 4-8, 2008. Deadline: October 31, 2007
http://www.valm.sk/fsta/
- **29th Linz Seminar on Fuzzy Set Theory (LINZ2008)**, Linz, Austria, February 12-16, 2008. Deadline: November 16, 2007
http://www.flll.jku.at/research/linz2008/
- **3rd International Conference on Genetic and Evolving Fuzzy Systems (GEFS'08)**, Witten-Bommerholz, Germany, March 4-7, 2008. Deadline: October 1, 2007
http://www.gefs08.de
- **12th International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems (IPMU 2008)**, Málaga, Spain, June 22-27, 2008. Deadline: December 1, 2007
http://sevein.matap.uma.es/~aciego/IPMU08/
- **8th International FLINS Conference on Computational Intelligence in Decision and Control (FLINS 2008)**, Madrid, Spain, September 21-24, 2008. Deadline: December 15, 2007
http://www.mat.ucm.es/congresos/flins2008/

Other Events

- **Uncertainty and Information in Systems - Mini Symposium in Honor of Distinguished Professor George J. Klir's Achievements**, Binghampton, NY, USA, September 21, 2007.
  http://emrs.binghamton.edu/Symposium/
- **3rd IFAC Workshop on Advanced Fuzzy and Neural Control**, Valenciennes, France, October 29-30, 2007.
  http://www.univ-valenciennes.fr/congres/afnc07/
- **4th International Conference on Soft Methods for Probability and Statistics**, Toulouse, France, September 8-10, 2008.