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In this issue, we highlight the plenary presentations of Janusz Kacprzyk and Lotfi Zadeh at the World Congress on Computational Intelligence (WCCI'06). A brief note on the Fuzzy Systems Pioneer Award presented to Janusz Kacprzyk at WCCI'06 is also presented. A report on the IFSA Council meeting held in Vancouver in conjunction with the WCCI'06 Congress is offered. Finally, a report on the IFSA 2007 World Congress to be held in Cancun, Mexico in June of 2007 is also given.

PLENARY SPEECH OF PROF. JANUSZ KACPRZYK AT THE WCCI'2006 CONGRESS

Prof. Janusz Kacprzyk presented at the WCCI'2006 Congress in Vancouver his plenary speech entitled:

Towards Implementable and Human-Centric Decision Support: The Role of Fuzzy Logic and Computing with Words and Perceptions

Abstract

We present first a brief account of modern approaches to real-world decision making, emphasize the concept of a decision making process that involves various factors and aspects like: the use of own and external, and explicit and tacit knowledge, involvement of various "actors," non-trivial rationality, etc. As an example we mention Checkland's deliberative decision making (which is an important elements of his soft approach to systems analysis). We also mention a crucial importance of intuition, and briefly outline Wierzbicki's rational theory of intuition. We review some "soft" approaches that have emerged in, e.g., decision and systems science

We emphasize a need for decision support systems, present their history, and basic types: data driven, communication driven and group DSSs, document driven, model driven, knowledge driven, Web based and interorganizational. We discuss some aspects of intelligence and of so-called intelligent systems, and indicate their implications for DSSs. Moreover, we mention implications of soft approaches.

We discuss the role of fuzzy logic, and in particular of Zadeh's general fuzzy-logic-based paradigm of computing with words and perception, to facilitate and make implementable DSSs that are conceptually and technically based on the new paradigms, approaches, techniques, etc. meant for real world decision making, in human centric systems. We discuss this both within the context of model based (e.g., involving optimization) and non-model-based DSSs, We show our own experience with data and document driven DSSs and present some real world applications that use elements of Zadeh's computing with words and perceptions paradigms, mainly for linguistic summarization and document categorization, and indicate their use and role in practical decision support. We advocate some newer approaches, notably involving those involving knowledge management and creation.

Biography

Janusz Kacprzyk, MS in CS and automatic control, Ph.D. in systems analysis, D.Sc. in CS, Professor since 1997, Member of the Polish Academy of Sciences since 2002. Since 1970 with the Systems Research Institute, Polish Academy of Sciences, currently as professor and Deputy Director for Research. Visiting professor at University of North Carolina, University of Tennessee, Iona College, University of Trento, and Nottingham Trent University. Research interests: soft computing, fuzzy logic and computing with words, in decisions and optimization, control, database querying, information retrieval. 1991 – 1995: IFSA Vice-President, 1995 – 1999: in IFSA Council, 2001- 2005: IFSA Treasurer, 2005: IFSA President-Elect, IFSA Fellow, IEEE Fellow. Recipient of numerous awards, notably 2005 IEEE/CIS Pioneer Award for seminal works on multistage fuzzy control, notably fuzzy dynamic programming. Editor of three Springer's book series: "Studies in Fuzziness and Soft Computing," "Advances in Soft Computing," "Studies in Computational Intelligence," on editorial boards of 20 journals. Author of 5 books, (co) editor of 30 volumes, (co) author of 300 papers. Member of IPC's at 150 conferences.

INVITED SPEECH OF PROF. LOTFI A. ZADEH AT WCCI'06

Prof. Lotfi Zadeh presented at the WCCI'2006 Congress in Vancouver his plenary speech entitled:

A New Frontier in Computation—Computation with Information Described in Natural Language

Abstract

What is computation with information described in natural language? A simple example. I am planning to drive from Berkeley to Santa Barbara, with stopover for lunch in Monterey. It is about 10 am. It will probably take me about two hours to get to Monterey and about an hour to have lunch. From Monterey, it will probably take me about five hours to get to Santa Barbara. What is the probability that I will arrive in Santa Barbara before about six pm? Computation with information described in natural language, or NL-Computation for short, is a problem of intrinsic importance because much of human knowledge is described in natural language. Existing natural languages techniques do not address the problem of NL-Computation. Our approach to NL-Computation centers on what is referred to as generalized-constraint-based computation, or GC-

Computation for short. A generalized constraint is expressed as $X \text{ isr } R$, where X is the constrained variable, R is a constraining relation and r is an indexical variable which defines the way in which R constrains X . NL-Computation involves three modules: (a) Precisiation module; (b) Protoform module; and (c) Computation module. The meaning of an element of a natural language, NL, is precisiated through translation into GCL and is expressed as a generalized constraint. An object of precisiation, p , is referred to as precisiend, and the result of precisiation, p^* , is called a precisiand. The Protoform module serves the function of abstraction and summarization. The Computation module is a collection of protoformal deduction rules, with a rule having two parts, symbolic and computational. These rules are employed to compute an answer to a query. The generalized-constraint-based computational approach to NL-Computation opens the door to a wide-ranging enlargement of the role of natural languages in scientific theories. Particularly important application areas are decision-making with information described in natural language, economics, systems engineering, risk assessment, qualitative systems analysis, search, question-answering and theories of evidence.

Biography

Lotfi A. Zadeh is a Professor in the Graduate School, Computer Science Division, Department of EECS, University of California, Berkeley. In addition, he is serving as the Director of BISC (Berkeley Initiative in Soft Computing). Lotfi Zadeh is an alumnus of the University of Tehran, MIT and Columbia University. He held visiting appointments at the Institute for Advanced Study, Princeton, NJ; MIT; IBM Research Laboratory, San Jose, CA; SRI International, Menlo Park, CA; and the Center for the Study of Language and Information, Stanford University. His earlier work was concerned in the main with systems analysis, decision analysis and information systems. His current research is focused on fuzzy logic, computing with words and soft computing, which is a coalition of fuzzy logic, neurocomputing, evolutionary computing, probabilistic computing and parts of machine learning. Lotfi Zadeh is a Fellow of the IEEE, AAAS, ACM, AAI, and IFSA. He is a member of the National Academy of Engineering and a Foreign Member of the Russian Academy of Natural Sciences and the Finnish Academy of Sciences. He is a recipient of the IEEE Education Medal, the IEEE Richard W. Hamming Medal, the IEEE Medal of Honor, the ASME Rufus Oldenburger Medal, the B. Bolzano Medal of the Czech Academy of Sciences, the Kampe de Fariet Medal, the AACC Richard E. Bellman Control Heritage Award, the Grigore Moisil Prize, the Honda Prize, the Okawa Prize, the AIM Information Science Award, the IEEE-SMC J. P. Wohl Career Achievement Award, the SOFT Scientific Contribution Memorial Award of the Japan Society for Fuzzy Theory, the IEEE Millennium Medal, the ACM 2001 Allen Newell Award, the Norbert Wiener Award of the Systems, Man and Cybernetics Society, Civitate Honoris Causa by Budapest Tech (BT) Polytechnical Institution, Budapest, Hungary, the V. Kaufmann Prize, International Association for Fuzzy-Set Management and Economy (SIGEF), other awards and twenty-three honorary doctorates. He has published extensively on a wide variety of subjects relating to the conception, design and analysis of information/intelligent systems, and is serving on the editorial boards of over fifty journals.



Prof. Zadeh presenting his enlightening invited talk at the WCCI'06.

FUZZY SYSTEMS PIONEER AWARD TO PROF. JANUSZ KACPRZYK AT WCCI'2006 CONGRESS IN VANCOUVER, CANADA

This highly prestigious award is presented to researchers to recognize significant contributions to early concepts and developments in the field of fuzzy systems. The Fuzzy Systems Pioneer Award is sponsored by the IEEE Computational Intelligence Society and is presented each year to at the IEEE International Conference on Fuzzy Systems or another major CIS conference. Regarding eligibility, the award is open to all members meeting the contribution requirements. In particular, the contributions must have been made at least 15 years prior to award date. The Fuzzy Systems Pioneer Award was presented to Prof. Janusz Kacprzyk for his early work on fuzzy multistage control, in particular fuzzy dynamic programming. Prof. Kacprzyk is with the Polish Academy of Sciences and is currently President-Elect of IFSA.

Previous recipients of the award are: Enric Trillas in 2005, Ronald Yager in 2004, Ebrahim J. Mamdani in 2003, Didier Dubois and Henri Prade in 2002, Jim Bezdek in 2001, Michio Sugeno and Lotfi Zadeh in 2000.



Prof. Janusz Kacprzyk receiving his Fuzzy Pioneer Award.

REPORT ON THE IFSA COUNCIL MEETING AT WCCI'06

The annual IFSA Council meeting was held during the WCCI'06 in Vancouver, Canada. On Tuesday, July 18th, 2006, from 12:00 to 1:00 PM the Council members under the leadership of Prof. Witold Pedrycz, our president, had their meeting. The place was the Sheraton Vancouver Wall Centre Hotel, Burrard Room. The agenda of the meeting focused on the most timely pursuits as well as included issues concerning the ongoing realization of the long-term objectives:

1. Approval of agenda
2. Reports from Vice-Presidents and treasurer
3. Update on the realization of the projects initiated at the previous Council meeting
3. Update on IFSA 2007
4. Update on IFSA 2009
5. Additional business
6. Adjournment

All the points in the agenda were discussed in detail and the Council arrived at constructive conclusions. The meeting was conducted in a very cordial atmosphere and was highly productive.



Members of the IFSA Council at the lunch meeting.



Prof. Janusz Kacprzyk distributing forms during the meeting.



Prof. Witold Pedrycz and Prof. Lotfi Zadeh discussing important points during the meeting.

REPORT OF IFSA '2007 PROGRESS

The IFSA '2007 Congress is well underway and so far there are 4 special sessions proposed by leaders in the specific areas. There is also a FLINT special track.



Prof. Oscar Castillo reporting on the progress of IFSA 2007 at the Council meeting.

The accepted special sessions (as of now) are:

1) [Relation Between Interval and Fuzzy Techniques](#)

Organizers: Vladik Kreinovich and Hung T. Nguyen

2) [The application of fuzzy logic and soft computing in flexible querying](#)

Organizers: Guy De Tré and Slawomir Zadrozny

3) [Fuzzy Multi-Objective Programming / Fuzzy Goal Programming](#)

Organizers: Mustafa Gunes, Seraj Yousif Abed, and Irfan Ertugrul

4) [Philosophical and human-scientific aspects of soft computing](#)

Organizer: Vesa Niskanen

5) [Intuitionistic fuzzy sets some related approaches and applications](#)

Organizers: Eulalia Szmidt and Janusz Kacprzyk

There is also a Special Track of FLINT organized by the research group at Berkeley.

IFSA-FLINT 2007 [Special Track: Fuzzy Logic and the Internet \(FLINT\)](#)

One of the main objectives of the FLINT is to design an intelligent search engine with high WebMIQ with higher level deductive capability by 2010.

The BISC Special Interest Group on Fuzzy Logic and the Internet (FLINT) will bring forward FLINT 2007 special track, series of workshops, tutorials, keynote talks and panels during the IFSA 2007. The registration for IFSA 2007 covers also all sessions and events organized by FLINT-2007.

Best Application and Theoretical Papers from FLINT 2007 will be considered for publication in journals and edited volumes.

The important objective of the FLINT is to design an intelligent search engine and Q&A System with high WebMIQ and Q&AMIQ with higher level deduction capability based on the advancement in the following areas:

- Add higher-level deduction capability
- Precisiation of meaning
- A logic for approximate reasoning
- Information summarization
- Add content to the existing information
- Semantic Web and distributed data-based development
- Ontology development
- Mobilization of the knowledge
- Web and Text Mining
- Machine-human interaction for better search and add human intelligence
- Development of web-question and answering (WQ&A)
- Search in Multi-Media
- Advances in analysis of graphs and networks
- Better targeted information delivery and services
- FLINT 2007 lunches a new Initiative: Computational Intelligence for Information and Internet Search in the Interest of the Society (COINS).
- “Intelligent search with high WebMIQ; potential for billions of queries for an industry worth hundreds of billion of dollars”
- “Overall forecast for document and content management estimates the market growing to \$15 billion in 2008.

Lotfi A. Zadeh; BISC Director

Masoud Nikraves; FLINT Chair and BISC Executive Director

IFSA MEMBERSHIP REPORT, 2006

Year 2006 brought for IFSA and its institutional members several changes and development in all branches including membership development. We were pleased to have an IFSA council meeting in Vancouver in July 2006 during the World Congress of Computational Intelligence. This was a great opportunity to meet and discuss with representatives of the institutional members about their activity and about the development of IFSA itself as an organization. I would like to take the opportunity to express my great appreciation to the IFSA council members and the representatives of the IFSA institutional members for their great help in preparing this report.



IFSA has 14 institutional members, these being listed below by category:

Category B: SOFT (Japan Society for Fuzzy Theory and Intelligent Informatics), CFSAT (Chinese Fuzzy Systems Association T), KFIS (Korea Fuzzy Logic and Intelligent Systems Society).

Category C: FMSAC (Fuzzy Mathematics and Systems Association of China), EUSFLAT (European Society for Fuzzy Logic and Technology), NAFIPS (North American Fuzzy Information Processing Society), SBA (Brazilian Society of Automatics), VFSS (Fuzzy Systems Society, Vietnam), SIGEF (International Association for Fuzzy Set Management and Economy), HFA (Hungarian Fuzzy Association), FIRST (Fuzzy systems and Intelligent Technologies Research Society of Thailand), NSAIS (North European Society of Adaptive and Intelligent Systems), HAFSA (Hispanic-American Fuzzy System Association), RAFSSoftCom (Russian Association for Fuzzy Systems and Soft Computing)

Member	Country	Number of individual members	Number of institutional members	Total
SOFT	Japan	1105	35	1140
CFSAT	Taiwan	301	0	301
KFIS	Korea	680	54	734
FMSAC	China	200	0	200
EUSFLAT	Europe	171	0	171
NAFIPS	North America	265	0	265
SBA	Brazil	60	0	60
VFSS	Vietnam	250	0	250
SIGEF	Spain	217	0	217
HFA	Hungary	54	0	54
FIRST	Thailand	44	0	44
NSAIS	Finland	30	1	31
HAFSA	Mexico	75	1	76
RAFSSoftCom	Russia	70	0	70
TOTAL		3522	91	3613

All the IFSA members have a wide range of activities covering membership development, publications, conferences and other activities. However, if we compare this report and the previous one, the number of the individual members is more or less the same as in 2005, these numbers are very close and we expect that the number of individual members will increase in all the societies till the end of the year (see the attached table). From the point of view of membership development, IFSA has a very active new

member RAFSSoftCom. Also, we expect that other societies will join IFSA soon. We are really excited about the fact that recently several national societies were created and we wish them a very prosperous year, looking forward to have them as institutional members. From the scientific point of view, the contributions of the IFSA institutional members are very important in further development of the topic of fuzzy logic and soft computing. Totally, IFSA members publish 12

journals and organized a great number of conferences, all of them having a high international reputation. Also, several workshops and conferences are (co)-sponsored by each of the societies. As a conclusion, we expect a sustained development of IFSA and all of its Institutional members.

***Imre J. Rudas** graduated from Bánki Donát Polytechnic, Budapest in 1971, received the Master Degree in Mathematics from the Eötvös Loránd University, Budapest, the Ph.D. in Robotics from the Hungarian Academy of Sciences in 1987, while the Doctor of Science degree from the Hungarian Academy of Sciences. He is active as a full professor and Head of Institute of Intelligent Engineering Systems. He serves as the Rector of Budapest Tech from August 1, 2003 for a period of four years. He is the Vice President of IFSA for Membership Development. He is the President of Hungarian Fuzzy Association and Steering Committee Member of Hungarian Robotics Association and John von Neumann Computer Society. He serves as an associate editor of IEEE Transactions on Industrial Electronics, member of editorial board of Journal of Advanced Computational Intelligence member of various national and international scientific committees. He is the founder of the IEEE International Conference Series on Intelligent Engineering Systems and IEEE International Conference on Computational Cybernetics, and some regional symposia. He has served as General Chairman and Program Chairman of numerous scientific international conferences. His present areas of research activity are: Robotics with special emphasis on Robot Control, Soft Computing, Computer Aided Process Planning, Fuzzy Control and Fuzzy Sets. He has published one book, more than 300 papers in various journals and international conference proceedings.*