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1. Honorable Chancellor USTM, Meghalaya, M.Hoque
2. Honorable Director NIT, Silchar, Prof. Dr. N.V. Despande
3. Honorable Vice Chancellor USTM, Meghalaya, Dr. P. G. Rao

Organizing Chairman:

Dr. P.C Mahanta, Director, RIST.

Convener:

Mr. Jainul Abudin, H.O.D, CSE, RIST.

Coordinator:

Mr. Karjan Basumatary, Asst. Prof , RIST.

Members:

1. Mr. Lalu Seban, NIT, Silchar.
2. Mr. Anup Kr. Bordoloi, Asst. Prof. USTM.
3. Ms. Himadri Duwarah, Asst. Prof. USTM.
4. Mr. Anirudha Chanda, Asst. Prof. USTM.
5. Ms. Jyothirmai Garapati, Asst. Prof. RIST.

Location:

USTM is located very strategically in the border of Assam in the state of Meghalaya in close proximity to the city of Guwahati. The University has been established in more than 400 acres of picturesque landscape surrounded by tranquil greenery in Assam Meghalaya border just one km from GS Road, 9th Mile (opposite of CRPF Group Centre), Ri Bhoi District, Meghalaya. It is about 85 kms from Shillong, the capital of Meghalaya and 6 kms from Dispur, the capital of Assam. The Campus is well connected by Rail & Air which is only 15kms from Guwahati Railway Station & 35kms from Guwahati International Airport

Campus Address: Techno City, Kling Road, Baridua, 9th Mile, Ri-Bhoi, Meghalaya.

Guwahati:

ISBT to USTM - 12 kms.

Khanapara to USTM- 3 Kms.

Dispur to USTM- 6 Kms.

Registration:

Registration form attached

Fee: Rs 500 (For Kit & Material and Lunch)

Last date for registration: 31.01.2015

Accommodation:

Will be arranged on request in hotels, and the participants have to pay.

Transportation:

Transportation will be arranged from Khanapara Veterinary College Main Gate for pick up and drop.

**One Day Workshop
on
Foundation of Fuzzy Set and Fuzzy logic**

7th February, 2015

Jointly Organized by



University of Science & Technology, Meghalaya

And

Regional Institute of Science & Technology

In association with

National Institute of Technology, Silchar

Prologue:-

Dealing with uncertainty has been one of the objectives of scientific research over a period of time. The standard probability theory is not designed to deal with imprecise probabilities or Z-probabilities which pervade real-world uncertainties. It can be stated that the Kolmogorov-based axiomatics of probability theory does not apply to Z-probabilities.

Fuzzy set theory is the other way of modeling uncertainty due to imprecision, fuzziness, and ambiguity. Fuzzy sets and fuzzy logic has gained and will continue to gain importance due to its practical applications wherein human perception plays an important role. In fuzzy logic, in moving from numerical to linguistic variables, we are moving in a counter traditional direction. Random variable and linguistic variables can be effectively modeled in fuzzy set theory. Fuzzy logic and its applications are now well-established and arguments for and against it have reached a steady state. Computing with Words based fuzzy set theory has played and will continue to play a pivotal role in dealing with several disciplines in science and technology which includes:, energy and environment, system analysis, biotechnology and its subset bioinformatics , instrumentation and control, reliability engineering , risk analysis, medical diagnosis, and alike.

Who should attend?

Faculty, Doctoral candidates. M. Tech/MSc students from any discipline are welcome. Basic knowledge of statistics and fuzzy sets will be advantageous

PROGRAMME

**February 07, 2015 Forenoon
[10 am to 12 Noon]**

A. Introduction

Fuzzy sets and Fuzzy logic: Background; uncertainty and imprecision; statistics and random processes; uncertainty, fuzzy sets and membership; chance versus ambiguity. Classical Sets and Fuzzy Sets: Operations and properties of classical (crisp) sets and fuzzy sets; mapping of classical sets to functions, Type 2 fuzzy sets. Examples Fuzzy Fault Tree Analysis: Case Study

B. Classical and Fuzzy Relational Calculus:

Operations and properties of crisp and fuzzy relations; fuzzy Cartesian product and composition; Examples Application of Fuzzy Relational Calculus in Medical Diagnosis

**February 07, 2015 Afternoon
[2 pm to 5pm]**

C. Classical and fuzzy logic with Applications Theoretical background and Case Studies:

- 1. Zadeh-Deshpande formalism for air quality assessment:*
- 2. Fuzzy logic based Environmentla Friendly air conditioner*
- 3. Fuzzy logic based infusion pump for Anesthesia*

D. Decision Making in Fuzzy Environment With Illustrative example : Job selection Strategy - - -

About the organizers:

Regional Institute of Science & Technology

RIST is affiliated to the prestigious North Eastern Hill University, approved by AICTE and promoted by ERD Foundation, Guwahati. RIST offers Engineering courses on various disciplines namely Computer Science, Civil, Electrical & Electronics, Mechanical and Electronics & Communication Engineering. Established in the year 2009, RIST has come out as one of the premier Engineering institute of the region. Since inception, the students have been showing outstanding performance both in University Examination and other national level Examination including GATE, CAT thereby placing themselves in leading organizations of the country.

University of Science & Technology, Meghalaya

USTM promoted by ERD Foundation, Guwahati is situated at baridua, 9th mile, Meghalaya and its campuses aptly named the "Techno City". School of Biological Sciences, Social Sciences and Humanities, Applied Sciences, Media and Cultural Studies, Business Sciences and Education are the various academic units of the university which are further divided into departments and institutes / Centres for imparting courses and program leading to the degree at undergraduate and post graduate level. Research is also carried out by various schools and departments of USTM leading to the award of the degree of PhD.

National Institute of Technology, Silchar

National Institute Of Technology, Silchar is one of the 30 National Institutes of Technology of India and was established in 1967 as a Regional Engineering College in Assam. In 2002 it was upgraded to the status of National Institute of Technology and was declared as Institute of National Importance under the National Institutes of Technology Act, 2007. The vision of NIT Silchar is: establishing unique identity by development of high quality human and knowledge resources in diverse areas of technologies to meet local, national, and global economic and social need and human society at large in self-sustained manner.



About the Speaker:

Professor Ashok Deshpande

Founding Chair Berkeley Initiative in Soft Computing (BISC)-Special interest Group (SIG)-Environment Management Systems (EMS) holds a PhD degree in Engineering and Technology. Dr. Ashok was Deputy Director, National Environmental Engineering Research Institute (NEERI) /CSIR. He is Visiting Professor in Indian Institute of technology Mumbai India and Adjunct Professor in College of Engineering, University of Pune India. He has over 4 decades of R&D experience and has over 120 publications in the Journals of international repute/conferences.

In the past, Dr. Ashok was WHO Adviser, Common Wealth Science Council Resource Scientist, World Bank Project Director for the studies on Probabilistic Risk Assessment for Chemical Process industry. He also organized a Workshop as WHO Adviser in 5 countries on Unaccounted for Water Management and also assisted Danish International Development Authority (DANIDA) as a Project Advisor.

More importantly, Professor LotfiZadeh, the founder of fuzzy logic, after listening to many seminar talks, asked Professor Ashok Deshpande to be the Chair of Berkeley (BISC)-(SIG)-(EMS). He is also guest faculty at the University of California Berkeley and visiting scientist at Lawrence Berkeley National Laboratory, CA.

In 2004, Dr. Ashok was invited by the International Atomic Energy Agency (IAEA) as an expert for organizing a Training Program at CDTN, Brazil on Fuzzy logic with applications and again in 2006. Between 2006-13) he organized Training workshop on Fuzzy sets and Fuzzy logic with Applications at the University of Illinois Chicago USA (sponsored by VRI Chicago) UBC Canada, Tribhuvan University Nepal , LTU Sweden, VIT Spain and CSU USA. Dr. Deshpande's has a passion and mission to propagate the use of fuzzy logic nationally and internationally. At present, his all doctoral students work only on fuzzy logic related topics. Professor Ashok delivered seminar talk in University of Maryland Baltimore (Dec 2013, University of University in Győr Dec 2013), Hungary. Ashok was recently (June 2014) invited to deliver seminar talks in Harvard University.

Professor Ashok Deshpande is deeply interested in Indian classical music