



ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ
"ವಿ ಟಿ ಯು ಅಧಿನಿಯಮ ೧೯೯೪" ರ ಅಡಿಯಲ್ಲಿ ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಸ್ಥಾಪಿತವಾದ
ರಾಜ್ಯ ವಿಶ್ವವಿದ್ಯಾಲಯ



Visvesvaraya Technological University

(State University of Government of Karnataka Established as per the VTU Act, 1994)
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REGISTRAR

Ref: VTU/Aca/2022-23/ 288

Date:

11 APR 2023

CIRCULAR

Subject: Two days workshop on "FUZZY LOGIC & CIVIL ENGINEERING APPLICATIONS" during April 25-26, 2023.

RASTA is organizing a 2 Days' workshop on "FUZZY LOGIC & CIVIL ENGINEERING APPLICATIONS" during April 25-26, 2023. This is in sequel to the three-day workshop on Machine Learning for Civil Engineers held during February 2-4, 2023. This is first of its kind workshop offered to the Civil Engineers and is aimed at introducing the concepts of machine learning in general and fuzzy logic in particular to the Civil Engineering fraternity that includes researchers, post graduate students, scientists, faculty members and professionals from Industry.

This workshop offers a holistic training on fuzzy logic to facilitate researchers, post graduate students and faculty members to model civil engineering problems where uncertainties and ambiguities in the data are inherent. In this workshop, hands on training on developing fuzzy inference systems, fuzzy clustering and fuzzy regression are offered through R and Mat Lab.

Topics of the workshop include:

- *Introduction to Logic, binary, multi-valued and fuzzy logic. Concepts of fuzzy sets, membership functions. Properties of membership functions.*
- *Developing fuzzy membership functions for parameters/variables specific to civil engineering. Fuzzification, building fuzzy rules, de-fuzzification methods, and Mamdani inference techniques.*
- *Fuzzy linear regression and development of models on R.*
- *Unsupervised clustering of data through fuzzy c-means algorithm for indexing of materials, and comparison with K-means algorithm.*

Brochure is attached

Yours faithfully,

[Signature]
11/04/23
REGISTRAR
[Signature]

To,

1. The Principals of all Engineering Colleges affiliated and the constituent Engineering College, VTU, Belagavi.

Copy to,

1. The In-charge , ITISUM, VTU, Belegavi to upload on the website and email to Principals of all Engineering Colleges affiliated and the constituent Engineering College, VTU, Belagavi.

RASTA –Centre for Road Technology

2 days workshop on

FUZZY LOGIC & CIVIL ENGINEERING APPLICATIONS

April 25-26, 2023

Organized by

RASTA

CENTRE FOR ROAD TECHNOLOGY

No.7 & 8, Volvo

Construction Equipments

Campus, Phase 1,

Peenya Industrial Area

Bangalore - 560058

CHIEF PATRONS

Mr. Dimitrov Krishnan

(MD Volvo CE India pvt ltd ,Chair
Person RASTA, RASTA Trustee)

Dr S Vidyashankar

(Vice Chancellor VTU)

Prof A Veeraragavan

(Retd Prof IIT Madras, Technical Advisor
RASTA)

Mr. B. Sridhar

(Managing Trustee, RASTA)

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Dr. Jaya R.S, Assoc. Prof., RASTA

ORGANIZING COMMITTEE

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RESOURCE PERSONS

The following experts will deliver lectures on various topics during the workshop.

Dr. M A Jayaram

Currently, Professor, RASTA, Bengaluru, has 37 years of academic and 20 years of research experience. Earlier he was the Director of the MCA Department at SIT, Tumakuru, during 2005- 2021. He served as a Professor and In-charge HOD, Civil Engg., at SIT, during 2021-22. Has published 100+ papers in International Journals & conferences, has guided 5 Ph.D. in computer applications, and has authored 17 textbooks for publishers like PHI, Universities Press and Orient Longman



Dr. Seelam Srikanth

Currently Associate Professor, School of Civil Engineering, REVA University, Bangalore, has 5 years of experience in teaching, published more than 20 papers in reputed journals and got 1 international patent grant. He has authored a textbook on Traffic Flow Modelling and published 10 articles on Artificial Intelligence applications. He is currently guiding 6 Ph.D. research scholars.



ABOUT RASTA

RASTA –RASTA (Resource center for Asphalt and Soil Training Academy) is a Center for Road Technology started in Bangalore in the year 2002. RASTA, a non-profit organization, is an initiative of Prof. C.E.G Justo and is currently managed by Volvo Construction Equipment (VCE). It is an Extension and Research Centre of Visvesvaraya Technological University, Belgaum. The vision of RASTA is to be a Centre of Excellence for road and Infrastructure research & practice in the country, which it aims to achieve through excellence in its 4 verticals Viz., Academics, Training, Research and Consultancy



ABOUT THE WORKSHOP

This two day workshop comes in sequel to the three day workshop on ML for civil engineers(series-1) organized during April 25-26, 2023 in RASTA. In this workshop which is second in the series, the participants will be taken one level above series-1. In this workshop, the concepts of fuzzy logic and related hands-on training will be imparted. The significance of this workshop lies in the fact that fuzzy logic provides a scientific way of dealing with uncertainties of non-statistical kind inherent in the data. In the realm of civil engineering, designing, characterizing materials, selecting appropriate materials and methods, and decision making involves heuristics and expertise. In this context, fuzzy logic as a machine learning paradigm offers a formalism for dealing with uncertainties, vagueness and ambiguities in the data in a humanistic way.

TOPICS TO BE COVERED

- Introduction to Logic, binary, multi-valued and fuzzy logic. Concepts of fuzzy sets, membership function. Properties of membership functions.
- Developing fuzzy membership functions for parameters specific to civil engineering, fuzzification, building fuzzy rules, Mamdani and Sugeno inference mechanisms. Developing fuzzy rule base, defuzzification, discussion on defuzzification methods.
- Hands-on training on development of fuzzy inference system on problems specific to civil engineering in R and MatLab.
- Fuzzy linear regression and development of models on R
- Fuzzy c-means algorithm for clustering of data, and its implementation on R

REGISTRATION

Kindly fill the following form to register to the workshop

[Click Here](#) or scan here



TARGET AUDIENCE

- Faculty members from academic institutions
- Ph. D/M.Sc. Engg Research scholars / PG Students
- Practicing Engineers from Industry

REGISTRATION FEE

- Rs. 1000/-** (Students/Research Scholars)
- Rs.2000/-**(Faculty members from academic institutions)
- Rs. 2500/-** (Participating Engineers from Industry)

RASTA A/c details:

A/c Name: RASTA Center for Road Technology
Current A/c No:50200028930560
HDFC Bank, Peenya Stage I
Branch IFSC: HDFC0001232

WORKSHOP VENUE

RASTA-CENTER FOR ROAD TECHNOLOGY
No.7 & 8, Volvo construction Equipment Campus, Phase 1, Peenya Industrial Area, Bangalore -- 560058

NOTE

- Registration fees include file containing course material, lunch and Refreshments.
- Participants will have to make their own arrangements for transportation and accommodation
- Certificate will be issued to all the participants