MAHARAJA INSTITUITE OF TECHNOLOGY MYSORE

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

2016-17

News Letter Volume 1

Messages

By Principal,

"I am immensely pleased to provide my message to the Departmental newsletter that the department is bringing out. This department is enjoying the intake of 120 pick of the bunch of students each year and across 4 years of their engineering program they make a mammoth strength in excess of 600 students constituting nearly 30% of the entire student strength of the college. The presence of these students is found in every activity or events, be it academic or extracurricular or cultural or sports that take place in the college or in the VTU. Their strength in every sphere is molded by a strong team of highly qualified faculty and a department that has all the facilities for the all-round development of the students that renders them to accept responsibilities and carryout them successfully. Having such wonderful students is a pride to the college and when they do so many good things, we need to have a forerunner to tell about their achievements to the world. In view of this it is essential to bring out a newsletter and I am happy that it is happening, we all welcome whole heartedly the effort towards this. Let this newsletter and series of such letters shall keep us all continuously informed about all the developments of the department in the years to come. I wish the Head of the Department, all the staff and students of the department for having taken the best initiatives in bringing out this Newsletter. I wish the staff and students of the department the best."

Inside This Issue

Editorial Team:

SHWETHA S SHETTY

CHAITHRASHREE

STUDENT COORDINATOR :

Arun shekar

HEMANTH

CHANDAN

RAMYA

BY PRESIDENT,

'"I am pleased to share with you the first E-newsletter from Information Science Department, MIT Mysore. You will be delighted to go through this first volume that will connect you to the many activities of this dynamic department. I thank the HOD, the Faculty, Staff and all Information Science Students for their tremendous enthusiasm, amazing involvement of academic interest that is shared in this issue of newsletter. My profound thanks to the editor and team of this newsletter for their initiative and interest in publishing it. I wish may the future issues grow with greater ideas through your appreciation and feedback."

By Secretary,

"Educational institutions contribute to the human progress through useful knowledge. Engineering colleges are to be even more effective instruments of technical progress. They also contribute to transformation of Society. Engineering education at Maharaja tries to fulfil the above requirements by creating learning and applying climate through its motto 'Service & Excellence'. Department of Information Science Engineering is a fore runner in this aspect. Students and faculty of Information Science Engineering are challenged to go beyond portals of classroom, by involving themselves in project work, professional conversation and by participating in different technical as well as co-curricular events. This newsletter records all the activities of department of Information Science Engineering. So let us strive to achieve excellence in whatever we undertake as professionals. The Department may excel with its exuberant achievements and research activities in the coming days. May God bless us all.

By Hod,

"As the saying goes by "Coming together is a beginning, keeping together is progress and working together is success", I congratulate the entire editorial team for their solidarity in bringing out successfully the first edition of e-NEWS, a Department newsletter for the academic year 2018-19. May God bless you."

VISION & MISSION

COLLEGE VISION

"To be recognized as a premier technical and management institution promoting extensive education fostering research, innovation and entrepreneurial attitude."

College Mission

- To empower students with indispensable knowledge through dedicated teaching and collaborative learning.
- To advance extensive research in science, engineering and management disciplines.
- To facilitate entrepreneurial skills through effective institute-industry collaboration and interaction with alumni.
- To instill the need to uphold ethics in every aspect.
- To mould holistic individuals capable of contributing to the advancement of the society.

Vision of the Department

To be recognized as the best Centre for technical education and research in the field of information science and engineering.

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Mission of the Department

- To facilitate adequate transformation in students through a proficient teaching learning process with the guidance of mentors and all-inclusive professional activities.

  To infuse students with professional, ethical and leadership attributes through industry collaboration and alumni affiliation.
- To enhance research and entrepreneurship in associated domains and to facilitate real time problem solving.

About Department

DR.SHARATH KUMAR .Y.H M.Tech,Ph.D

Associate Professor & Head Of The Department

Dr.Pushpa.D M.Tech,ph.D
Assistant Professor

Saraswathi.D M.Tech
Assistant Professor

Shantha.S M.Tech
Assistant Professor

ChaithraShree M.Tech
Assistant Professor

Amruth.V M.Tech
Assistant Professor

Chitra.C M.Tech
Assistant Professor

Puneeth.P M.Tech
Assistant Professor

Rajani Chetan M.Tech
Assistant Professor

Ramya.S M.Tech
Assistant Professor

Smithashree.k.p M.Tech
Assistant Professor

Shwetha Shetty M.Tech
Assistant Professor

Hemavathi.H.N M.Tech
Assistant Professor

SomaShekar.B.M M.Tech
Assistant Professor

Department Activities

TW

two days workshop on ethical hacking

MR.GOUTHAM MADHWARAJ demonstrating Some example of ETHICAL HACKING.

MR.GOUTHAM MADHWARAJ,

Application Security Test Engineer

ARIES GLOBAL

PYTHON WORKSHOP

A 2 days workshop was organized for final year students on **Python** by Mr. **Jeril** Senior software engineer, **Raw data technologies Cochin** on 27th and 28th of Feb 2017.

Python is a widely used high-level programming language for general purpose programming. Python is an easy to learn, powerful programming language.

The objective of workshop is to bridge the gap of advanced programming knowledge in students. To teach students to build applications using python GCL. To provide hands on experience to make students practically understand the programming concepts.

Students active participation

Toppers of the Department

3rd SEMESTER

1) HEMANTH GOWDA H L (4MH15IS028): (8.7%)

2) THANUSHREE M S (4MH15IS102): (8.4%)

3) ANITHA ANANDA RAO (4MH15IS009) :(8.1%)

5th SEMESTER

1) ANIRUDHA N (4MH14IS008): 705 for 900 (78.3%)

2) VISHAKA GUPTA (4MH14IS114): 688 for 900 (76.4%)

3) SAMATHA R (4MH14IS079): 667 for 900 (74.1%)

Overall Percentage of Result: 82.2%

7th SEMESTER

1) AMRUTHA U (4MH13IS005): 692 for 900 (76.8%)

2) TEJA BHAT S (4MH13IS094): 663 for 900 (73.6%)

3) ADEEBA SULTANA (4MH13IS002): 648 for 900 (72.0%)

Overall Percentage of Result: 85.1%

8th SEMESTER

1)Teja Bhat S (4MH13IS094): 604 for 750 (80.5

2)Amrutha U(4MH13IS005): 598 for 750 (79.7)

3)Soundarya S(4MH13IS083): 596 for 750 (79.4%)

6th SEMESTER

1) ANIRUDHA N (4MH14IS008):693 for 900 (77.0%)

2) ARPITHA G (4MH14IS015):692 for 900 (76.8%)

Student Achievements

Event	Prize/ Award/ Participation	Date	Organized by	Title of Event	Within/ Outside State	Student Name
IOT Hackathon	Best Project	09-04-2016 10-04-2016	Rev Engg	Hackathon	Within State	Rajath V
NSS Camp	Participation	01-04-2017 07-04-2017	VTU and NSS	Leadership Camp	Within state	Rajath V
Geethayana	2nd Prize	April 2017	GSSS College	Blind Coding	Within State	Rajath V
Geethayana	1st prize	April 2017	GSSS college	Technical crossword	Within state	Rajath V

Best project FOR SHREYAS S,CHETHANA AND SUJETH participated in S.D.M INSTITUTE OF TECHNOLOGY

Placements

Sl No	**Name**	**Company Name**	**Designation**
1	Anjana H	VTIGER	Trainee Software Engineer
2	Shrujana G	ETHNUS	AR-TRAINEE
3	Archana Maiyya	ETHNUS	AR-TRAINEE
4	Chitra Ramakrishna	ETHNUS	AR-TRAINEE
5	vinay kumar HS	ETHNUS	AR-TRAINEE
6	Anusha G.K,	VEE TECHNOLOGIES	Medical coding
7	Chitra Ramakrishna,	VEE TECHNOLOGIES	Medical coding
8	Priyanka MS	VEE TECHNOLOGIES	Medical coding
9	shwetha R,	VEE TECHNOLOGIES	Medical coding
10	Vinay kumar HS	VEE TECHNOLOGIES	Medical coding
11	Sushmitha C Patil,	UNISYS	Software Developer
12	Shrujana G,	UNISYS	Software Developer
13	Safwan Jidda	UNISYS	Software Developer
14	Spandana M S	BIZTIME IT SOLUTIONS	Software Developer
15	Chitra Ramakrishna	Theorems Limited	Software Developer
16	Chitra Ramakrishna, Aishwarya P	ILM	Software Developer
17	Chitra Ramakrishna	Mphasis	Software Developer

18	Prajwala P	Compassites Software Solutions	Software Developer
19	Spandana M S	ABC learning institute	Software developer
20	Sujeth S H	CSS corps	Software Developer
21	Shraddha Selar	Amazon	Software Developer
22	Anusha G K	Theorems Limited	Software Developer
23	Anusha G K	ILM	Software Developer
24	Anusha G K	Mphasis Limited	Software Developer
25	Prathima	ILM	Software Developer
26	Shwetha	ILM	Software Developer
27	Kavya H P	Vedha Softech Private Limited	Software Developer
28	Megha V	Vedha Softech Private Limited	Software Developer
29	Spandana	Vedha Softech Private Limited	Software Developer
30	Chaitra	Vedha Softech Private Limited	Software Developer
31	Prajwala P	Vedha Softech Private Limited	Software Developer
32	Vandhana HK	Vedha Softech Private Limited	Software Developer
33	Anugna yadav	Vedha Softech Private Limited	Software Developer
34	Sahana	Vedha Softech Private Limited	Software Developer
35	Monika V	Vedha Softech Private Limited	Software Developer
36	Shrujana	Vedha Softech Private Limited	Software Developer
37	Shreyas N	Vedha Softech Private Limited	Software Developer

Articles,

By ARUNSHEKAR 8TH SEM

Machine Learning and its Applications

Machine learning, by its definition, is a field of computer science that evolved from studying pattern recognition and computational learning theory in artificial intelligence. It is thelearning and building of algorithms that can learn from and make predictions on data sets. These procedures operate by construction of a model from example inputs in order to makedata-driven predictions or choices rather than following firm static program instructions.

"A computer program is said to learn from experience E with respect to some task T and some performance measure P, if its performance on T, as measured by P, improves with experience E." -- Tom Mitchell, Carnegie Mellon University

Machine learning involves two types of tasks:

- **Supervised machine learning:** The program trained on a pre-defined set of "training examples", which then facilitate its ability to reach an accurate conclusion when given new data.
- **Unsupervised machine learning:** The program given a bunch of data and must find patterns and relationship there in.

  Machine Learning is a sub-set of artificial intelligence where computer algorithms are used to autonomously learn from data and information. In machine learning computers don't have to be explicitly programmed but can change and improve their algorithms by themselves. Today, machine learning algorithms enable computers to communicate with humans, autonomously drive cars, write and publish sport match reports, and find terrorist suspects. I firmly believe machine learning will severely impact most industries and the jobs within them, which is why every manager should have at least some grasp of what machine learning.

WHAT IS MACHINE LEARNING USED FOR?

Machine learning systems are used all around us, and are a cornerstone of the modern internet.

Machine-learning systems are used to recommend which product you might want to buy next on Amazon or video you want to may want to watch on Netflix.

Every Google search uses multiple machine-learning systems, to understand the language in your query through to personalizing your results, so fishing enthusiasts searching for "bass" aren't inundated with results about guitars. Similarly, Gmail's spam and phishing-recognition systems use machine-learning trained models to keep your inbox clear of rogue messages.

Article by PROFESSOR,

DR. PUSHPA.D M.tech,ph.D

SURF (Speeded-Up Robust Features)

Feature selection and detection are the major issues in image processing and computer vision while using SIFT for keypoint detection and description the performance is comparatively slow and people needed more speeded-up version. In 2006, three people, Bay, H., Tutelars, T. and Van Gool, L, published another paper, "SURF: Speeded Up Robust Features" which introduced a new algorithm called SURF. SURF goes a little further and approximates Log with Box Filter. Below image shows a demonstration of such an approximation. One big advantage of this approximation is that, convolution with box filter can be easily calculated with the help of integral images. And it can be done in parallel for different scales. Also, the SURF rely on determinant of Hessian matrix for both scale and location.

For orientation assignment, SURF uses wavelet responses in horizontal and vertical direction for a neighborhood of size 6s. Adequate gaussian weights are also applied to it. Then they are plotted in a space as given in below image. The dominant orientation is estimated by calculating the sum of all responses within a sliding orientation window of angle 60 degrees. Interesting thing is that, wavelet response can be found out using integral images very easily at any scale. For many applications, rotation invariance is not required, so no need of finding this orientation, which speeds up the process. SURF provides such a functionality called Upright-SURF or U-SURF. It improves speed and is robust up to $\pm 15^{\circ}$ For feature description, SURF uses Wavelet responses in horizontal and vertical direction (again, use of integral images makes things easier). A neighborhood of size 20sX20s is taken around the key point where s is the size. It is divided into 4x4 subregions. For each subregion, horizontal and vertical wavelet responses are taken and a vector is formed like this, $v = (\sum d_x, \sum d_y, \sum |d_x|, \sum |d_y|)$. This when represented as a vector gives SURF feature descriptor with total 64 dimensions. Lower the dimension, higher the speed of computation and matching, but provide better distinctiveness of features.

For more distinctiveness, SURF feature descriptor has an extended 128-dimension version. The sums of d_x and $|d_x|$ are computed separately for $d_y < 0$ and $d_y \geq 0$. Similarly, the sums of d_y and $|d_y|$ are split up according to the sign of d_x, thereby doubling the number of features. It doesn't add much computation complexity.

In short, SURF adds a lot of features to improve the speed in every step. Analysis shows it is 3 times faster than SIFT while performance is comparable to SIFT. SURF is good at handling images with blurring and rotation, but not good at handling viewpoint change and illumination change.

GREAT ALUMINI MESSEGE

Hi! I am Arun, currently working at Mahindra & Mahindra, Bangalore. I am a first batch student of Maharja Institute Of Technology Mysore and graduated in 2011, with glorious 4 years and many memorable moments, which transformed me into a professional. "The first step is, you have to say that you can.". It was a start in which we, as Information Science engineering students, had invited industrial experts and academicians to give us insight on the latest trends in the industry. MITM has come a long way since 2007. I wish the college and its faculty the very best.