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ज्ञानमुत्तमम्
International Institute of Information Technology Bangalore

Newsletter | June 2018

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From the Director's Desk

We are proud to have representation from our faculty in the ACM India Council. You will read more about it in the newsletter. This is the first time in our history we have faculty representation in the leadership of both IEEE and ACM, premier professional societies for computing and IT. While we have the unique opportunity of having not just one but two faculty members in the ACM Council, ACM itself made a big announcement of one of their "firsts" in June. ACM President Vicki L. Hanson has been named the Executive Director and CEO, effective July 1, 2018. She is the first woman CEO of ACM. Dr. Hanson, who is an ACM Fellow, is currently Distinguished Professor at the Rochester Institute of Technology and Visiting Professor at the University of Dundee.

Riding on the wave of "firsts", this June we had our first summer school in Theoretical Computer Science, which was well received by the participants. Apart from the news about the newbies, we have had the happy occasion of the Honorable Minister for ITBT, Mr. K. J. George visiting our campus for inaugurating our MINRO Center, a Government of Karnataka funded initiative.

As always, June goes in preparation for our Convocation in July. This year, our campus went through a renovation and a "face-lift", to be unveiled during our Convocation. June saw the behind-the-scenes activity and the campus was bustling in preparation for the Convocation.

HAPPY READING!

Achievements

Professors R. Chandrashekar and G. Srinivasaraghavan have been recognized by Analytics India Magazine as **two of the 20 most prominent Analytics & Data Science academicians** in India.

https://analyticsindiamag.com/20-most-prominent-analytics-data-science-academicians-in-india-2018/

Professors Meenakshi D' Souza and Manish Gupta have been elected as **Members-at-Large of the Association for Computer Machinery (ACM) - India Council**, for a four-year period until June 30, 2022. The ACM India Council is elected by voting, by ACM India members. ACM India boasts of 4638 Professional Members, and 6349 Student Members, as of May 2018. The new council took charge during the 7th Annual General Meeting of ACM India (http://india.acm.org/MOM_AGM-ACM-June-16-2018.pdf) on June 16.

An article co-authored by Vidhya Y. (M.Sc. Digital Society alumnus) got an Honourable Mention at this year's ACM CHI Conference on Human Factors in Computing Systems.

Citation: Potluri, V., Vaithilingam, P., Iyengar, S., Vidya, Y., Swaminathan, M., & Srinivasa, G. (2018, April). CodeTalk: Improving Programming Environment Accessibility for Visually Impaired Developers. In Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (p. 618). ACM.

Campus News

The **62nd Senate meeting** of IIIT Bangalore was held on June 20.

IIIT Bangalore celebrated **4th International Yoga Day** on June 21. The celebration started with lighting of the lamp, after which we formally welcomed the guest and an alumnus, Surabhi Taluja, who is a faculty member of Art of Living Organization. Ms. Taluja explained the importance of asanas and meditation followed by demonstration and practice of asanas and meditation. She also explained the importance of yoga in daily life.

The students, faculty and staff participated in the event enthusiastically. The event was concluded with formal vote of thanks by Prof. R. Chandrashekar, Dean-Academics.

The **interviews for admissions to research degree programmes**, namely Master of Science by Research and Ph.D. were conducted during June 11-19.

The Summer School on Theoretical Foundations of Computer Science at IIIT Bangalore was held during June 18-22. The event saw the participation from students, researchers, and faculty members from all parts of the country. Out of the 56

participants who attended the school, about 25 of them were provided accommodation and limited travel support. In addition to the lectures/tutorials from the Institute's faculty members, there were also talks by experts from industry such as Microsoft Research, IBM Research, Sonata Software, and academia such as IISc, Bangalore and IMSc, Chennai. For more information, visit http://tfocs.iiitb.ac.in/.

Shri K. J. George, Honorable Minister for Large & Medium Scale Industries, IT and BT, Science and Technology, Government of Karnataka, visited IIIT Bangalore on June 25. During his visit, he **inaugurated the Machine Intelligence and Robotics (MINRO**) Centre at IIIT Bangalore.

⫥ Publication Including Presentations

The article titled **"How digitisation can drive growth in India"** by Prof. V. Sridhar has appeared in Business Line on June 15.

https://www.thehindubusinessline.com/opinion/how-digitisation-can-drive-growth-in-india/article24174405.ece

The paper titled **"Exact Algorithms for Terrain Guarding"**, co-authored by Pradeesha Ashok along with Fedor Fomin, Sudeshna Kolay, Saket Saurabh and Meirav Zehavi appeared in ACM Transactions on Algorithms.

Citation: Pradeesha Ashok, Fedor V. Fomin, Sudeshna Kolay, Saket Saurabh, and Meirav Zehavi. "Exact algorithms for terrain guarding." ACM Transactions on Algorithms (TALG) vol. 14, no. 2, 20p., June 2018, Article no. 25.

Ramakrishnan Raman presented his paper titled **"Learning Framework For Maturing Architecture Design Decisions For Evolving Complex SoS"**, co-authored with Meenakshi D'Souza at the 13th IEEE System of Systems Engineering Conference held in Paris, France, during June 19-22.

Surabhi Jha and Meenakshi D'Souza presented their paper on **"Worst case execution time estimation for control code of automation systems"** at the 4th IEEE International Conference on Advances in Computing and Communication Engineering, held in Paris on June 22-23.

Article published: **Substituents' influence on the C−H···π interaction in the T-shaped benzene dimer**, by Brijesh Kumar Mishra and Ramanathan Venkatnarayan Theoretical Chemistry Accounts (2018) 137:72

Prof. B. Ashok presented a poster on **"The acoustically forced, charged bubble in a liquid"** (authors: B. Ashok*, T. Hongray & J. Balakrishnan) at the 15th Experimental Chaos & Complexity Conference (ECC15), organized by the Rey Juan Carlos University at its campus in Madrid, Spain, 4-7 June, 2018. The abstract was published in the conference Book of Abstracts (ISBN:978-84-697-0441-7).

BITS OF LATE REPORTING

Prof. Srinath Srinivasa visited **Web Science Institute**, University of Southampton and City University of London, United Kingdom, during May 21-25. During the trip, he also presented a talk titled "Many Worlds on a Frame, Characterizing online social cognition" at the University of Southampton.

IIIT Bangalore in Media

Faculty, Staff and Students

Prof. Sadagopan, Director attended the **INAE Workshop on Electronics Manufacturing** at BEL Academy of Excellency, Bengaluru on June 1.

Faculty Strategy meeting was held on June 6 at IIIT Bangalore.

Profs. Jyotsna Bapat and Debabrata Das were **invited by the Department of Computer Science of University of Twente, The Netherlands, as external examiners of a thesis and its final viva**. They attended the final viva on June 8, in person, for the thesis by Alireza Masoum, titled "Less is More - Data Reduction in Wireless Sensor Networks." The thesis has been supervised by Prof. Paul Havinga and co-supervised by Dr. Nirvana, both of whom belong to the Department of Computer Science, University of Twente, The Netherlands.

Balaji Parthasarathy delivered a talk on Tuesday, 19th June, titled **"Historical accident or path dependence? Science, technology, industry, and the state in 20th century Bangalore"** as part of the monthly lecture series at the National Center for Biological Sciences, Bangalore.

Meenakshi D'Souza participated as an invitee in a **panel discussion at the ACM India Annual Celebration of Women in Computing**, held at PES University,

Bangalore, on June 29. The panel discussion was on the topic of a possible gap in programming skills amongst Indian engineering students and graduates.

Academic Milestones

RESEARCH PROGRAMMES

Saptarshi Chaudhuri (PH2010902) completed his Ph.D. thesis oral examination titled **"Enhanced MAC Protocol And SON Technique To Improve The QoS of LTE-Advanced Network"** on June 13.

Maithily Diwan (MS2015006) completed her Master of Science by Research thesis oral examination titled **"A Framework For Modeling and Verifying IoT Communication Protocols"** on June 19.

Priti Kumari (PH2015007) completed her State of the Art seminar titled **"Security in Healthcare"** on June 25.

Gaonkar Pradnya Tukaram (PH2015005) completed her State of the Art seminar titled **"Energy Cost and Comfort Optimization in Semi-Public Buildings"** on June 25.

M.TECH. THESIS ORAL EXAMINATIONS

Aditya Sanjay Paliwal (IMT2013004) on **"Differential Neural Computers for Combinatorial Optimization"** on June 1.

Meghana Madhyastha (IMT2013026) on **"Scalable Directed Graph Convolutional Network"** on June 4.

Yeon Hyang Kim (SMT2015036) on **"Automation of Form Generation for Workflow Management System for an Organization"** on June 4.

Agarwal Atul Rajendra (MT2016005) on **"Very Deep CNN Acoustic Modelling from Speech Waveform"** on June 5.

Anoop Toffy (MT2016016) on **"Acoustic Model Refinement for Automatic Speech Recognition"** on June 5.

Ashish Gupta (MT2016026) on **"GABiNet: Gated Attention Network for Non-Factoid Answer Selection in Video Comprehension"** on June 5.

Aneesha Devulapally (IMT2013013) on **"Music Genre Classification"** on June 6.

Kishore Shobha Nanda (SMT2015015) on **"A Deep Learning Based Approach for Detection and Localization of Exudates Diabetic Retinopathy Fundus Images"** on June 6.

Chellapriyadharshini M. (MT2016041) on **"Efficient Acoustic Model Refinement for Low Resource Languages Using Semi-Supervised Methods"** on June 7.

Amith D' Souza (SMT2015003) on **"Retinal Image Super-resolution Using Deep Learning"** on June 7.

Ashish Kumar Singh (SMT2015004) on **"Predicting Level of Eye Strain due to Prolonged Usage of Smartphone in Low Light Environment"** on June 7.

Mohamed Abdul Khader (SMT2015019) on **"Tracking of Fast Moving Objects in Table Tennis Videos"** on June 7.

Anirudh Ravi (IMT2013005) on **"Automatic Assignment of Domain Tags to Educational Videos"** on June 8.

Apoorv Vikram Singh (IMT2013006) on **"Clustering Perturbation Resilient**

Interfaces" on June 8.

Meghana M. Reddy (IMT2013025) on **"On the Chromatic Art Gallery Problem"** on June 8.

Trisha Mittal (IMT2013053) on **"Learning How Humans Guess and Draw Sketches"** on June 8.

Sai Dheeraj Nadella (MT2016523) on **"Implementation of Dynamic Power Cutoff and Dual-Threshold Voltage Technique to Control Leakage for a CMOS based Subsystem Design"** on June 8.

Manjunath Channappagoudar (SMT2014003) on **"Application Sluggish Launch Detection and Prevention in Android Mobile Devices"** on June 8.

Raghavendra Ghatage (SMT2015024) on **"From Bay Area, USA to Bangalore, India: Quantifying Spatio-temporal Patterns of Urban Land Use Change from 1973-2018 Using Landsat Legacy and Spatial Metric"** on June 8.

Kumaresh Krishnan (IMT2013021) on **"Understanding Odor Representations in the Piriform Cortex"** on June 11.

Chandan Natraj (SMT2015009) on **"Forward and Angular Velocity Estimation Using Mobile Phone Cameras on Cars in Indian Road Conditions"** on June 11.

Harsh Jain (SMT2015012) on **"Rash Driving Detection Using Frontal View Camera Stream"** on June 11.

P. S. Srinivasan (IMT2013028) on **"A theoretical study of the Bichromatic covering problems and an experimental study of the Steiner Tree problem"** on June 12.

Abhilash Karthik (SMT2015001) on **"Three Way Classification of Fundus Images**

into Healthy, Glaucoma, and Diabetic Retinopathy Using Convolutional Neural Network and its Localization" on June 12.

Amit Seth Hirawal (SMT2015002) on **"Dynamic Trip-Vehicle Assignment for Online Ride-Sharing Requests"** on June 12.

Bhavith M. P. (SMT2015005) on **"Novel In-storage Computing Architecture and Method for Functional and Performance Improvement"** on June 12.

Prashant Singh (SMT2015023) on **"Multiobjective Evolutionary Algorithms for the Taxi Sharing Problem"** by June 12.

Srinivasa M. R. (SMT2015028) on **"Evaluation of Breast Cancer Histopathology Using Transfer Learning"** on June 12.

Suraj Kumar Singh (SMT2014029) on **"Location Based Resource Management [D1] Algorithms for D2D Communications"** on June 12.

Suhas P. S. (SMT2015031) on **"Towards Realistic Synthetic Video Creation Using Monocular Depth Estimation and Scene Understanding: Angular Velocity Estimation Using Mobile Phone Cameras on Cars in Indian Road Conditions"** on June 12.

Rajesh D. M. (IMT2013032) on **"Reinforcement Learning: Improving Learning Agents in Continuous Action Space"** on June 13.

Revanuru Karthik (IMT2013033) on **"Activity Recognition in Classrooms Using Structural RNN"** on June 13.

Rahul Sharma (MT2016112) on **"Multi-object Target Disappearance Prediction"** on June 13.

Parameswaranath V. M. (SMT2015022) on **"Personalized Notification Manager for**

Smart Machines" on June 13.

D. Srivatsan (SMT2015030) on **"Dual Phone: An Intelligent Android Based Smart Multi-User System"** on June 13.

Sukhdeep Singh (SMT2015032) on **"Utterance Recommendation for Bixby"** on June 13.

Vasundhara Komaragiri (IMT2013018) on **"Learning Structure from Unstructured Information: Process Description to Flowchart"** on June 14.

Nigel Steven Fernandex (IMT2013027) on **"Bayes-YOLO: Model Uncertainty in Deep Convolutional Architectures for Confident Object Detection"** on June 14.

Rishabh Manoj (IMT2013035) on **"Automated Evaluation of Programming Assignments"** on June 14.

Sneha Singhania (IMT2013045) on **"Deep Learning Methods for (i) Extracting Numeric Semantics, and (ii) Entity Relation Classification"** on June 14.

Deb Kumar Chowdhury (SMT2015011) on **"Test case generation framework for rapid programming language using decision trees based learning"** on June 14.

Campus Visitors

June 6: Dr. Vinayak Prabhu, Colorado State University Boulder

June 07: Mr. Sunil Pathak & Team

June 12: Dr. Sajan Mathew, Registrar (E&E), Alliance University

June 13: Shri. P Ravi Kumar, Additional Chief Secretary to Government of Karnataka

June 13: Ex-Chief Secretary Mr. A Ravindra, IAS (Rtd.)

June 14: Chairman & Members of PRSG Committee:

1. Dr. Debashis Dutta
2. Dr. A K Garg
3. Mr. K Kodandarama
4. Mr. Sharad Sharma
5. Mr. Navratan Katariya, and
6. Mr. Anurag Kumar

June 19: Dr. Rangachar Kasturi, University of South Florida

June 20: Dr. Venkatesan Chakaravarthy, IBM Research

June 21: Dr. Priyanka Das, IISc

June 22: The Shortlisted Candidates of Integrated M.Tech 2018

June 22: Dr. Shivakumar Sastry, University of Akron.

June 26: Dr. Vinod Veera Reddy, Samsung Research Institute, Bangalore

June 26: Mr. Nandakumar, IFS, Deputy Secretary, Office of Minister of State (MJA)

June 27: Mr. Sunil Kumar, Senior Advisor, Science & Innovation India, UK Science & Innovation Network in India, British Deputy High Commission

Samvaad Talks

June 18: **"Historical accident or path dependence?: Science, technology, industry, and the state in 20th century Bangalore"** by Balaji Parthasarathy.

June 11: **"3D Interconnects — It's just a wire in a wireless world!"** and **"Assistive devices — A collaborative experience!"** by Prof. Madhav Rao.

Guest Talks

June 21: "Optimal Relay Selection in Underlay Cooperative Cognitive Radio Networks" by Dr. Priyanka Das, Indian Institute of Science

June 26: A Talk on Spatio-temporal Signals by Dr. Vinod Veera Reddy, Samsung Research Institute, Bangalore

June 30: Talk by Nobel laureate Dr. Muhammad Yunus

Campus Calendar for July - August

July 8: 18th Convocation

July 13: Arrival of M.Sc. Digital Society new batch

July 17: Arrival of M.Tech. new batch

July 16-31: Preparatory Term

July 31: Arrival of iMTech new batch

August 1: Term I begins

August 8: Add/drop last date for elective courses

August 15: Independence Day celebrations