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## Activity Report - 2020

Following activities are conducted to enhance the technical knowledge in the areas of computational intelligence, machine learning, Artificial Intelligence, Soft Computing for professionals, faculty and students of engineering courses by giving preference to IEEE members with some benefits to IEEE CIS members. These activities have motivated the professional, faculty and student community to become membership and has in turn helped the growth of technical professionals in the areas of IEEE CIS.

### **Contents:**

1. Workshop on Edge Intelligence and Computing
2. Workshop on Demystify Design Thinking in Multidisciplinary Engineering: IT Approaches
3. Webinar on Advanced IT Technologies
4. Intelligent Edge Computing Techniques for Diverse Applications



Following are the activities conducted for the year 2019-2020 under IEEE CIS.

## 1. Workshop on Edge Intelligence and Computing

Edge computing is transforming the way data is being handled, processed, and delivered from millions of devices around the world. While Edge Intelligence is to enable and realize the true value of the Internet of Things, Edge Intelligence pushes processing for data intensive applications away from the core of the cloud to the edge of the network. Users get real-time insights and experiences, delivered by highly responsive and contextually aware apps. This workshop aims at exposing the participants to the principles of Embedded systems, application of Embedded Systems and Data intelligence and a set of tools that is necessary to understand those principles. The workshop will consist of hands-on sessions on Embedded and Sensor Devices using MQTT. Participants were guided through these tools' usage and utility.

### Topics Covered:

- Embedded Linux
- Systems Thinking
- SOS
- Edge Intelligence
  - o Machine Learning, Deep Learning
  - o Internet of Things, Embedded Wireless Sensor Networks
  - o Power Management, Edge Computing
- Data Collection
- Data Consistency – resource Constraints
- Multiplexing – Clock Speed, Optimization
- Security in Edge Intelligence
- Hands on sessions and demonstrations – Embedded and Sensor Devices using MQTT



## **2. Workshop on Demystify Design Thinking in Multidisciplinary Engineering: IT Approaches**

Design thinking is a process for creative problem solving. Design thinking draws on logic, imagination, intuition and systemic reasoning to explore the possibilities of what could be, and to create desired outcomes that benefit the end user. A design mind-set is not problem-focused, it's solution-focused, and action-oriented. It involves both analysis and imagination. Design thinking is linked to an improved future and seeks to build ideas up—unlike critical thinking, which breaks them down.

Design thinking is all about structured processes that encourage creativity in problem solving. It's a useful approach for cities that want to design meaningful solutions to city challenges by working with their citizens.

We can use ontology as a tool for thinking about the idealized design of a system and the evaluation of the realized design. The on-tology concisely encapsulates the logic of the system.

Design Thinking applied on all domain should be clear and much easier to understand, in order to deploy on various fields.

DevOps is a set of practices focused on automating and streamlining the processes between software development and IT teams to build, test, and release software faster and more reliably. The Design Thinking Framework encourages engineers to start with the customer in mind, and DevOps focuses on delivering the best customer experience. A design thinking mind-set injects more user-centric thinking into the DevOps environment and increases the likelihood that IT will deliver what users need.

## **3. Webinar on Advanced IT Technologies**

This Webinar was conducted for faculty and students under IEEE CIS. It covered various advanced topics like cognitive computing Machine learning, Hadoop ecosystem, Medical Image analysis, Big data analytics and iOS app development. This webinar helped students to know the recent technologies and their applications.

#### **4. Intelligent Edge Computing Techniques for Diverse Applications**

Intelligent Edge Computing aims at making the life of people easier by performing faster computations using embedded technologies. The aim of the STTP is to educate faculty and industry personals on various edge computing methodologies and diverse applications. AI and machine learning techniques to the edge to support the services and applications to the edges of the network. Latency is significantly reduced as data is analysed and processed closer to its origin. Deeper insights can be obtained from comprehensive analysis with rapid responses and hence resulting in better customer experiences. Some of the popular use cases of intelligent edge computing are autonomous vehicles, healthcare devices, retail advertising, smart speakers, improved video conferencing, faster responding security systems, smart transportation and gaming. Therefore, intelligent edge computing assists to develop high quality system with added security and privacy of the data.

##### Objectives of the Short-Term Training Program

- To introduce Edge computing to process the large volume of data generated, through the Internet of objects (IO) and things(IOT).
- To familiarize the participants to modularize machine learning, data analytics, deep learning and artificial intelligence for Intelligent Edge Computing.
- To disseminate the usage of intelligent edge computing methodologies in various applications.
- To expose the participants to the real world scenarios through demos and live projects.

##### **The Following events will be conducted in the month of November to December 2020**

- Local Industry interactions supported by IEEE CIS head office.
- Guest Lectures
- Training programs
- Academic Curriculum Development
- Partial Delivery of courses

Organizing Team	Date	Speaker	Affiliation	Participants (approx)	Effective Event count
Edge Intelligence and Computing	20 <sup>th</sup> January	Sreenivasa Chary  Bipin Pradeep Kumar	Philips research, Founder BelBird Technologies  Cofounder, Gaia Smart Cities	60	
	21 <sup>st</sup> January	Nishant Krishna	Co-Founder and CTO - Tech Machinery and More Pvt Ltd	60	
	22 <sup>nd</sup> January	Sriram Pullela  Vijaya Kumar Ivaturi  Sirish Batchu  Dr. Yogesh Simhan	Green Sense Werks  Cofounder and CTO, Crayon Data  Engineering Head, Ather Energy  Assistant Professor, IISc	60	
	23 <sup>rd</sup> January	Chetan Kumar S  Dr. Nayanjeet Chaudhary  Flt. Lt. A T Kishore  Dr. Nandakumar  Ashwin Amarapur	CEO and Cofounder, AiKaan Labs  Visiting Professor, Community Medicine MSR Medical College  Chief Executive Officer at Vidhya Sangha Technologies Pvt. Ltd  Associate Professor, MSR Medical College  IISc, Algo vision Medical Imaging	60	
	24 <sup>th</sup> January	Industry Visit		60	

Demystify Design Thinking in Multidisciplinary Engineering: IT Approaches	27 <sup>th</sup> July	Dr. Vijaya Kumar B.P, HOD  Mr. Bipin Pradeep Kumar  Dr. Nanda Kumar B.S  Dr. Arkalgud Ramprasad	Professor & Head of Department of ISE,RIT  Founder and CEO at Sesovera  Associate Professor, Ramaiah Medical College  Director Ramaiah Public Policy Center	50	
	28 <sup>th</sup> July	Mr. Aditya Garg  Mr. Lokesh Sapre  Dr. Thyagaraju G.S.	Agile Testing Alliance, Larsen & Toubro Infotech Ltd, India, NSE.IT  Program Director Yash Technologies  Professor & Head Department of CSE, SDMIT, Ujjire	50	
	29 <sup>th</sup> July	Dr. Prabhu N.Ganesh  Swaroop S P  Shruthi G and Ashwitha A  Prashanth Kambli and Evangeline	Professor,IIM, Bangalore  Software Engineer in 5G core R&D Team, CISCO Systems  Assistant Professor, MSRIT  Assistant Professor, MSRIT	50	
	30 <sup>th</sup> July	Dr. Mohith kumar Goel  Mr. Nishant Krishna	Associate VP, Data science  Chief Technology Officer, Tech Machinery Labs	50	

		Mr. Rajendra Bendre	Founder, Creative Wandering		
		Dr. Annapurna P Patil	Professor MSRIT.		
		Dr.Prathibha R J	Assistant Professor, JSSSTU, Mysore		
	01 <sup>st</sup> August	Dr. Kaushik Kumar	Associate Professor, Dept. of Mech, Birla Institute of Technology	50	
		Dr. Niranjan Murthy	Assistant Professor, MSRIT		
Webinar on Advanced IT Technologies	23 <sup>rd</sup> May	Dr. Vijaya Kumar B P	Professor and Head, Information science and Engineering, RIT	80	
	26 <sup>th</sup> May	Dr. Siddesh G M	Associate Professor, Information science and Engineering, RIT	80	
	30 <sup>th</sup> May	Dr. Megha p Arakeri	Associate Professor, Information science and Engineering, RIT	80	
	26 <sup>th</sup> May	Dr. Sumana M	Associate Professor, Information science and Engineering, RIT	80	
	27 <sup>th</sup> May	Shashidhara H S	Associate Professor, Information science and Engineering, RIT	80	
Intelligent Edge Computing Techniques for Diverse Applications	2 <sup>nd</sup> November	Mr Sandeep Agarwal	Executive Vice President & Chief Operating Officer, DBS, Happiest Minds	45	
		Mr Bipin Pradeep Kumar	Co-Founder of GAIA		
		Mr Lokesh R	Lead Developer Phase Power Private Limited		
	3 <sup>rd</sup> November	Mr Chetan Kumar S	CEO and Co-Founder at AiKaan Labs Pvt Ltd	45	
		Dr Sumana M	Associate Professor, Dept of ISE		

	4 <sup>th</sup> November	Dr Vijaya Kumar B P  Dr Priya Ranjan Mishra  Mr Swaroop S P	Professor & Head , Dept of IS&E, MSRIT  Founder and Director, BelBird Technologies  Software Engineer, CISCO	45	
	5 <sup>th</sup> November	Dr Hareesha K S  Dr Yogesh Simhann  Mr Manoj Karanth  Mr Ramprasadh T V & Mr Bharathan KuduvaSanthanam	Professor, Department of Computer Applications, MIT, Manipal  Associate Professor, Indian Institute of Science  Head, Data and Intelligence Service Line, Mindtree Technologies  Lead , IoT Practice , Data and Intelligence Service Line, Mindtree Technologies Lead, Technology solutions , IoT Practice , Data and Intelligence Service Line	45	
	6 <sup>th</sup> November	Dr Nishant Krishna  Mr Ravikiran A M	Co-founder and CTO – TechMachinery Labs  Sr Network Security Engineer, Mphasis Private Limited	45	
	7 <sup>th</sup> November	Dr Sumit D Chowdury  Dr Megha Arakeri	Founder , Sesovera  Associate Professor, Dept of ISE	45	





**RAMAIAH Institute of Technology** | **IEEE BANGALORE SECTION** | **IEEE Computational Intelligence Society Bangalore Chapter**

Faculty Development Program on **Edge Intelligence and Computing**

20<sup>th</sup> to 24<sup>th</sup> January 2020 | Venue: LHC Seminar Hall-II

Organized by Departments of Information Science & Engineering, Computer Science & Engineering and Master of Computer Applications

Technically supported by IEEE-CIS Bangalore Chapter, Green Sense Werks and AIKa Labs



**RAMAIAH Institute of Technology** | **All India Ranking 59** | **1<sup>st</sup> among Engg. Colleges** affiliated to VTU, Belagavi

One Week Online Faculty Development Programme on **Demystify Design Thinking in Multidisciplinary Engineering: IT Approaches**

**Inaugural and Keynote Address: Cognitive Computing for Supporting Design Thinking in Information Technology**

**27/07/2020 Monday**  
**9:15 to 11:30 am**

**Dr. VIJAYA KUMAR B P**  
Professor and Head, Information Science and Engg., Dept., M S Ramaiah Institute of Tech., Bangalore.

Meeting number: 1662718998  
<https://msramaiah.webex.com/msramaiah-eu/j-ghpMTID-m7142316400b74ca478150947fcdc>

Department of Information Science & Engineering, Computer Science & Engineering, Department of Master of Computer Applications

**RAMAIAH Institute of Technology** | **IEEE BANGALORE SECTION** | **IEEE Computational Intelligence Society Bangalore Chapter**

**One Week Online FDP (Webinar) on Demystify Design Thinking in Multidisciplinary Engineering :IT Approaches**  
27th July to 1st Aug 2020

**Expert Speakers**

**Dr. Vijaya Kumar B P** - Topic: Cognitive Computing for Supporting Design Thinking in Information Technology  
**Dr. A Ramaprasad** - Topic: Design Thinking Using an Ontology  
**Dr. Nanda Kumar B S** - Topic: Design Thinking on IT Solutions for Community  
**Mr. Bipin P Kumar** - Topic: Design Thinking for Smart Cities

**Panel Discussion with Eminent Educationist and Industrialist**  
**Edge Intelligence and Computing**  
22nd January 2020  
Ramaiah Institute of Technology, Bangalore

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Webinar on **Advanced IT Technologies**

**Dr. Vijaya Kumar B P** - Professor and Head, Information science and Engineering, IIT  
Topic: Cognitive computing and Fundamentals of Machine learning  
Date: 23rd May 2020  
Time: 5:30pm to 6:30pm

**Dr. Siddesh G M** - Associate Professor, Information science and Engineering, RIT  
Topic: Working with Hadoop Ecosystem  
Date: 26<sup>th</sup> May 2020  
Time: 11:00am to 01:00pm

**Dr. Megha p Anakere** - Associate Professor, Information science and Engineering, RIT  
Topic: Medical Image Retrieval for Clinical Decision Making  
Date: 30<sup>th</sup> May 2020

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One Week Online AICTE sponsored Short Term Training Programme on **Intelligent Edge Computing Techniques for Diverse Applications**  
2nd November - 7th November 2020

**Expert Speakers**

**Dr. Vijaya Kumar B P** - Topic: Future of Cognitive Edge Computing  
**Sandeep Agarwal** - Topic: Welcome the New Normal - Challenges and Opportunities  
**Mr. Bipin P Kumar** - Topic: Energy and Edge AI  
**Dr. Yegesh Simha** - Topic: Distributed Analysis on the Edge

**Chethan Kumar S** - Topic: ...  
**Mr. Nishant Krishna** - Topic: ...  
**Mr. Suresh P P** - Topic: ...  
**Dr. Priya Ranjan Mishra** - Topic: ...

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**M.S.RAMAIAH INSTITUTE OF TECHNOLOGY** (AUTONOMOUS INSTITUTE, AFFILIATED TO VTU) BANGALORE-54

DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING, MSRIT

In association with **IEEE COMPUTATIONAL INTELLIGENCE SOCIETY, BANGALORE CHAPTER**

Cordially invites you to the **Inaugural Function** of **6-DAY AICTE SPONSORED STTP ON INTELLIGENT EDGE COMPUTING TECHNIQUES FOR DIVERSE APPLICATIONS**

On Monday, 2<sup>nd</sup> November 2020 at 9:30 A.M. Conducted Online

**MR. SANDEEP AGARWAL**  
EVP & COO Digital Business solutions at Happiest Minds.  
Chief Guest



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