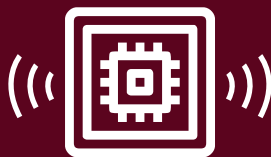




ICT ACADEMY
GLOBALTECHNOLOGY
FORUM 2020

14-18 October 2020

ISBN: 978-81-937760-5-6



ICSCES 2020

INTERNATIONAL CONFERENCE ON
SIGNALS, COMMUNICATION
AND EMBEDDED SYSTEMS

CONFERENCE PROCEEDINGS

Hosted by



ICTACADEMY
OF TAMIL NADU

gtf2020.ictacademy.in

CONFERENCE PARTNERS

Under the Guidance of



Department of Information Technology
Government of Tamil Nadu

Supported by



Ministry of
Electronics &
Information Technology
Government of India



Department of Science & Technology
Government of India



NITI Aayog



ATAL INNOVATION MISSION



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 **GITAM**
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VISAKAPATNAM • HYDRABAD • BENGALURU

 **MUTHAYAMMAL**
ENGINEERING INSTITUTIONS

ABOUT ICT ACADEMY OF TAMIL NADU

ICT Academy of Tamil Nadu is an initiative of the Government of India, Government of Tamil Nadu and Industries. ICT Academy is a not-for-profit society, the first of its kind pioneer venture under the Public-Private-Partnership (PPP) model that endeavours to train the higher education teachers and students thereby exercises on developing the next generation teachers and industry ready students.

ICT Academy was started to meet the skill requirements of the industry and generate more employment especially in tier 2 and 3 towns, the rural parts of the country. The organization was formed with representations from the State Government of Tamil Nadu and leading companies in the ICT industry.

With training of teachers and students as the primary objective, ICT Academy has been working through a seven pillar program in the areas of Faculty Development, Student Skill Development, Entrepreneurship Development, Youth Empowerment, Industry-Institute Interaction, Digital Empowerment and Research & Publications.

ICT Academy has strives on every aspect to provide a holistic service to every stakeholder of the education ecosystem in developing the next generation of talent pool in India to make them industry ready employees, innovators, entrepreneurs and leaders.

Through its various initiatives, ICT Academy has been part of strengthening the India's four important visions on Skill India, Digital India, Startup India and Make in India.



ABOUT GTF2020

ICT Academy promotes research activities by providing platform in the form of International Scientific Research Journals and Conferences for sharing the research outcomes in the areas of Information and Communication Technology. GTF2020 by ICT Academy hosted online through a virtual platform thereby providing opportunity to researchers from across the globe to participate and learn from the comfort of being at their place. The Online platform also helped cutting unnecessary costs and expenditures towards travel/stay for attending such global conferences. The Forum created access to expertise on range of topics with LIVE as well as recorded sessions for the future reference.

GTF2020

Keynote Sessions

GTF2020 featured expert keynote sessions delivered by leaders and renowned experts across the globe, with a higher level of abstraction providing specific explanations, and applications to the participants on the theme of the conference. The keynotes provided deeper insights, knowledge and value to the participants.

GTF2020

Tutorial Sessions

Expert Tutorial sessions was an integral part of Global Technology Forum 2020. Experts from across the globe submitted proposals on current and emerging trends related to the theme of GTF2020. It was intended to provide a high quality learning experience to the attendees who wish to learn new technologies. Expert tutorials were featured in the conference delivered by leading industry professionals and renowned academicians.

Conference - Paper Presentations

GTF2020 hosted technical research paper presentations in each of the conferences by researchers, practitioners, scientists and academicians. Accepted papers were invited for presentation and are published in this Conference proceedings. The best papers selected from the presentations are being reviewed for publication in ICT Academy Journals, which are listed in Group I of UGC-CARE List.



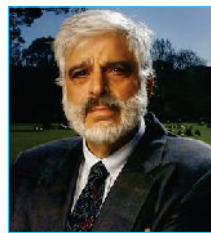
KEYNOTE AND TUTORIAL SPEAKERS



Thiru R B Udhayakumar
Hon'ble Minister For Revenue
Disaster Management & IT
Government of Tamil Nadu, India



Hans Raj Verma IAS
Additional Chief Secretary
IT Department
Govt. of Tamil Nadu, India



Prof Jeffrey Ullman
Stanford University
United States



Dr Rajendrakumar IAS
Additional Secretary Ministry
of Electronics & Information
Technology, Govt. of India



Prof K K Aggarwal
Chairman
National Board of Accreditation
Government of India



Prof Tarek Sobh
Lawrence Technological
University, United States



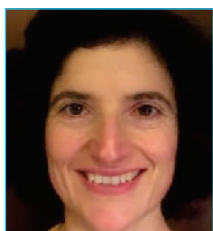
Lakshmi Narayanan
Emeritus Vice Chairman, Cognizant
Chairman, ICT Academy, India



Prof Mufti Mahmud
Nottingham Trent University
United Kingdom



Prof Demetri Terzopoulos
Distinguished Professor and
Chancellor's Professor of Computer Science
University of California, United States



Prof Elisabetta Comini
University of Brescia
Italy



Ramanan Ramanathan
Mission Director Atal Innovation Mission
NITI AAYOG, Government of India



Prof Mohamed-Slim Alouini
King Abdullah University
of Science and Technology
Saudi Arabia



Sunita Sanghi
Principal Advisor, Ministry of
Skill Development & Entrepreneurship
Government of India



Dr Tanya Morton
MathWorks
United Kingdom



Prof M K Surappa
Vice Chancellor
Anna university, India



M Vijayakumar IAS
Managing Director
Electronics Corporation of Tamil Nadu



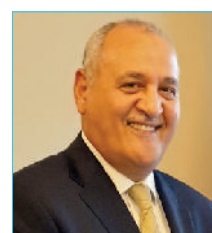
Dr Karisiddappa
Vice Chancellor
Visvesvaraya Technological
University, India



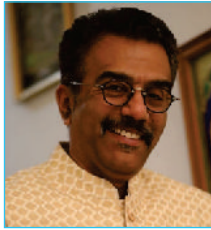
Pete Winn
Senior Research Advocate
Oracle



Dr Christian Hirst
Head - Political and Economic Sections
Australian High Commission
New Delhi



H E Mohamed Maliki
Ambassador of His Majesty
the King of Morocco to the
Republic of India



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Vice Chairman
Sona Group of Institutions
Salem, India



M Sivakumar
Chief Executive Officer
ICT Academy, India



Nikhil Bagalkotkar
India Technical Head & Strategy
Autodesk



Tmt P Ramana Saraswathi, IAS
Joint Director of e-Governance
and Joint CEO
TNEGA, Government of Tamil Nadu



Prof Rajkumar Buyya
University of Melbourne
Australia



Dr Anbu Rathinavel
Chief Design officer
Intellect Design Arena Ltd



Prof Salil Kanhere
University of New South Wales
Australia



Kiran Jacob
Dassault Systemes



Dr Ramesh Pudale
Autodesk



Dr G Sainarayanan
General Manager
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HCL Technologies Ltd



Dr Debanand Singdeo
MathWorks



Ramana Anchuri
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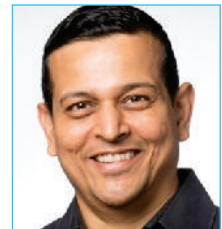
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TCS Research & Org. Infra.



Dr Dhruv Chandel
MathWorks



Prof Bjoern Schuller
Imperial College of London
United Kingdom



Subodh Gajare
Cisco



Arjun Meda
Automation Anywhere



Pramod Agrawal
Automation Anywhere



Naga Chakrapani Pemmaraju
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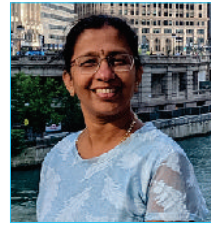
Dr Mustafa Kishk
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Saudi Arabia



Anand Pujari
Autodesk



Dr B Anbuthambi
President
ICT Academy



Bindu Nanjundaswamy
Oracle



Dhiren Dutta
Oracle



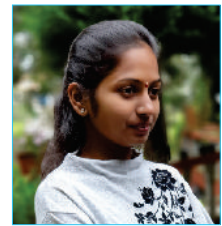
Shishir Laxminarayan
Oracle



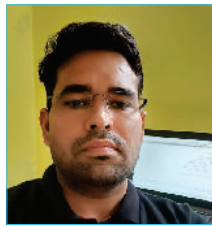
Shivaprasad A V
Vmware



Ramya Victor
Vmware



Chandana Radhakrishna
Oracle



Rajendra Raghuvanshi
Oracle



Badari Hiriyur
Autodesk



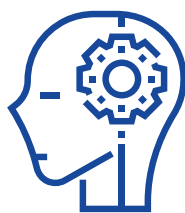
Ranjani Swaminathan
Vmware



ICT ACADEMY
GLOBALTECHNOLOGY
FORUM 2020

14 - 18 OCT 2020

5 DAYS
CONFERENCE SCHEDULE



ICARA 2020

INTERNATIONAL CONFERENCE ON
**AI, ROBOTICS AND
AUTOMATION**

Day 1 : 14 October 2020 (Wednesday)

TIME (in IST)

AGENDA

GTF 2020 Inaugural Session

Opening Address

09:30 am - 09:45 am

Thiru Lakshmi Narayanan

Chairman, ICT Academy & Emeritus Vice Chairman, Cognizant

Special Address

09:45 am - 10:00 am

Thiru Hans Raj Verma IAS

Additional Chief Secretary - IT Department, Government of Tamil Nadu, India

Chief Guest Address

10:00 am - 10:30 am

Thiru R B Udhayakumar

Hon'ble Minister for Revenue, Disaster Management & Information Technology
Government of Tamil Nadu, India

Vote of Thanks

10:30 am - 10:40 am

M Sivakumar

Chief Executive Officer, ICT Academy

Technical Keynote Session

10:40 am - 11:15 am

The Battle for Data Science

Prof Jeffrey D Ullman, Professor (Emeritus), Computer Science, Stanford University, United States

Tutorial Session I (Audi 1)

Reinforcement Learning for Autonomous Systems using MATLAB

Dr Dhruv Chandel - Engineer, Education Team, Mathworks

Naga Chakrapani Pemmaraju - Senior Application Engineer, Mathworks

Tutorial Session II (Audi 2)

Building RPA Bots with Automation Anywhere Enterprise A2019

Pramod Agrawal - Vice President & Regional CTO, Automation Anywhere

Arjun S Meda - Senior Developer Evangelist, Automation Anywhere

Tutorial Session III (Audi 3)

Explore limitless possibilities with Generative Design using Autodesk Fusion 360

Dr Ramesh Pudale - Program Manager, Autodesk Education Experiences

Anand Pujari - Account Manager, Autodesk Education Experiences

Badari Hiriyur - Education Program Specialist, Autodesk Education Experiences

Technical Paper Presentation

01:45 pm - 03:45 pm

Track 1a: **AI in Healthcare**
(Audi 1)

Track 2a: **Data Analytics**
(Audi 2)

Track 3a: **NLP, Imaging and Computer Vision**
(Audi 3)

03:50 pm - 05:20 pm

Track 1b: **AI in Healthcare**
(Audi 1)

Track 2b: **Data Analytics**
(Audi 2)

Track 3b: **NLP, Imaging and Computer Vision**
(Audi 3) **Security & Automation**

Evening Keynote Session

05:30 pm - 06:00 pm

AI in Engineering Education, Research and Industry

Dr Tanya Morton, Director of APAC and EMEA Customer Success Engineering, Mathworks

06:00 pm - 06:30 pm

Treating Neurodegenerative Diseases: A Neuronal Networks Decoding Approach

Prof Mufti Mahmud, Senior Lecturer, Computing & Technology, Nottingham Trent University, UK

06:30 pm - 07:00 pm

The Evolution of Design, how AI, ML and Robotics are changing the design processes in the Design, Manufacturing & Construction Industries

Nikhil Bagalkotkar, India Technical Head & Strategy, Autodesk




ICSCS 2020

INTERNATIONAL CONFERENCE ON
SIGNALS, COMMUNICATION
AND EMBEDDED SYSTEMS

Day 2 : 15 October 2020 (Thursday)

TIME (in IST)

AGENDA

Opening Keynote Session

09:25 am – 09:45 am

Prof K K Aggarwal

Chairman, National Board of Accreditation, Government of India

09:45 am – 10:00 am

Chocko Valliappa

Vice Chairman & Trustee, Sona Group of Institutions, Salem, India

Technical Keynote Session

10:00 am – 10:40 am

What should 6G be?

Prof Mohamed-Slim Alouini, Professor, Electrical and Computer Engineering, King Abdullah University of Science and Technology, Saudi Arabia

10:40 am – 11:15 am

Blockchain for Cyber Physical Systems

Prof Salil Kanhere, Professor, School of Computer Science & Engineering, University of New South Wales, Australia

Technical Paper Presentation

09:30 am – 11:15 am

Track 1d: **AI in Healthcare and Industrial Applications in AI**
(Audi 1)

Track 2d: **Data Analytics**
(Audi 2)

Tutorial Session I (Audi 1)

Challenges and Solutions for Flight Duration Enhancement in UAV-enabled Wireless Networks: A Stochastic Geometry Perspective

Prof Mohamed-Slim Alouini - Professor, Electrical and Computer Engineering, King Abdullah University of Science and Technology, Saudi Arabia

Dr Mustafa Kishk - Postdoctoral Research Fellow, King Abdullah University of Science and Technology, Saudi Arabia

11:20 am – 01:45 pm

Tutorial Session II (Audi 2)

Oracle Cloud : Provisioning Linux OS

Bindu Nanjundaswamy - India Business Unit Head – Linux Support Delivery, Oracle

Anuradha Sharma - Country Manager, Oracle Academy Initiatives - South Asia

Shishir Laxminarayan - Technical Support Engineer, Oracle

Dhiren Dutta - Senior Technical Support Engineer, Oracle

Technical Paper Presentation

11:20 am – 01:30 pm

Track 1e: **Industrial Applications in AI**
(Audi 3)

01:45 pm – 03:45 pm

Track 1a: **Bio-Medical Imaging & Video Processing**
(Audi 1)

Track 2a: **Communication Systems**
(Audi 2)

Track 3a: **Wireless Communications & Networks**
(Audi 3)

03:50 pm – 05:20 pm

Track 1b: **Bio-Medical Imaging & Video Processing**
(Audi 1)

Track 2b: **Embedded Systems & its Applications**
(Audi 2)

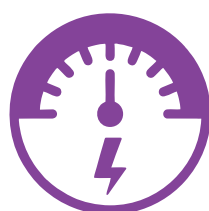
Track 3b: **Embedded Systems & its Applications**
(Audi 3)

05:30 pm – 07:00 pm

Track 1c: **Bio-Medical Imaging & Video Processing**
(Audi 1)

Track 2c: **Signals and its Applications**
(Audi 2)

Track 3c: **Wireless Communications & Networks**
(Audi 3)



ICSEHV 2020

INTERNATIONAL CONFERENCE ON
ADVANCES IN SENSORS, ENERGY
AND HYBRID VEHICLES

Day 3 : 16 October 2020 (Friday)

TIME (in IST)

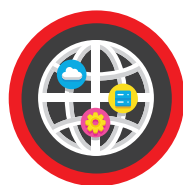
AGENDA

09:30 am – 10:10 am	<i>Opening Keynote Session</i>
	Dr Rajendra Kumar IAS Additional Secretary, Ministry of Electronics and IT (MeitY), Government of India
	Kiran Jacob Industry Process Consultant - Dassault Systemes India Pvt Ltd
	Thiru M Vijayakumar IAS Managing Director, Electronics Corporation of Tamil Nadu Limited, Government of Tamil Nadu, India

11:20 am – 01:45 pm	<i>Tutorial Session I (Audi 1)</i>
	Modeling & Simulation of Electrical Systems using MATLAB & Simulink Dr Debanand Singdeo - Technical Education Evangelist, Mathworks Ramana Anchuri - Education Technical Evangelist, Mathworks
	<i>Tutorial Session II (Audi 2)</i>
	Virtualization 101 Shivaprasad Adampalli Venkateshappa, Staff Engineer, Vmware Ranjani Swaminathan, Senior Technical Staff, Vmware Ramya Victor, Senior Technical Staff, Vmware

01:45 pm – 03:45 pm	<i>Technical Paper Presentation</i>	
	Track 1a: Industrial Energy Systems (Audi 1)	Track 2a: Sensors & Applications (Audi 2)
03:50 pm – 05:20 pm	Track 1b: Industrial Energy Systems (Audi 1)	Track 2b: Hybrid Control for Autonomous Vehicle (Audi 2)

05:30 pm – 06:15 pm	<i>Evening Keynote Session</i>
	Metal Oxides Nanostructures for Chemical Sensing Prof Elisabetta Comini, Professor of Physics, Director - Sensor Laboratory, University of Brescia, Italy
06:15 pm – 07:00 pm	Recent Directions in Multidisciplinary Engineering Research and Education Prof Tarek Sobh, Provost, Professor of Electrical and Computer Engineering, Lawrence Technological University, United States



ICIHPE 2020

INTERNATIONAL CONFERENCE ON
ADVANCES IN IOT, HIGH
PERFORMANCE AND
EDGE COMPUTING

Day 4 : 17 October 2020 (Saturday)

TIME (in IST)

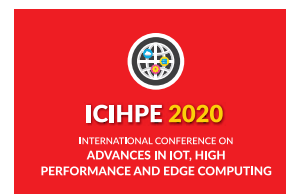
AGENDA

	<i>Opening Keynote Session</i>
09:30 am – 10:05 am	The Impact of Cloud in Research Pete Winn, Senior Research Advocate, Oracle, Australia
10:05 am – 10:40 am	AI and IoT for Digital Health Prof Bjoern W Schuller, Professor of AI, Department of Computing, Imperial College London, UK
10:40 am – 11:15 am	Neoteric Frontiers in Cloud and Edge Computing Prof Rajkumar Buyya, Redmond Barry Distinguished Professor, University of Melbourne, Australia

	<i>Tutorial Session I (Audi 1)</i>
	5G driving Massive IoT - Architecture and industry use cases Subodh Gajare - Lead Architect, CISCO
	<i>Tutorial Session II (Audi 2)</i>
11:20 am – 01:45 pm	Oracle Cloud: Setting up Web Server Bindu Nanjundaswamy - India Business Unit Head – Linux Support Delivery, Oracle Anuradha Sharma - Country Manager, Oracle Academy Initiatives - South Asia Rajendra Raghuvanshi - Principal Technical Support Engineer, Oracle Chandana Ramakrishna - Technical Support Engineer, Oracle

	Technical Paper Presentation		
01:45 pm – 03:45 pm	Track 1a: IoT Techniques and Applications (Audi 1)	Track 2a: IoT Techniques and Applications (Audi 2)	Track 3a: Edge and Cloud Computing (Audi 3)
03:45 pm – 05:20 pm	Track 1b: IoT Techniques and Applications (Audi 1)	Track 2b: IoT Techniques and Applications (Audi 2)	Track 3b: Cloud Computing Security (Audi 3)

	<i>Evening Keynote Session I</i>
	R Ramanan Mission Director – Atal Innovation Mission, NITI AAYOG, Government of India
	Deep Learning of Neuromuscular and Visuomotor Control of a Biomimetic Simulated Humanoid Prof Demetri Terzopoulos, Distinguished Professor and Chancellor's Professor of Computer Science, University of California, United States
	<i>Evening Keynote Session II</i>
05:30 pm – 07:30 pm	Sunita Sanghi Senior Advisor, Ministry of Skill Development & Entrepreneurship, Government of India
	Tmt P Ramana Saraswathi, IAS Joint Director of e-Governance and Joint CEO, TNEGA, Government of Tamil Nadu
	Dr Christian Hirst Head - Political and Economic Sections, Australian High Commission, New Delhi
	H E Mohamed Maliki Ambassador of His Majesty the King of Morocco to the Republic of India



GTF 2020 - Closing Ceremony

Day 5 : 18 October 2020 (Sunday)

TIME (in IST)

AGENDA

POWER PANEL DISCUSSION - THE ROLE OF ACADEMIA IN FUTURE OF RESEARCH

This exclusive power panel will drive discussions and deliberations on the title "**The Role of Academia in Future of Research**" and which shall bring in the perspectives in the following areas:

- Changing Role of Academia in Research
- The Future of Research
- Academia Collaboration in Industrial Research

10:00 am – 11:30 am

Prof M K Surappa

Vice Chancellor, Anna university, India

Dr Karisiddappa

Vice Chancellor, Visvesvaraya Technological University, India

Haridas Menon U

Head - HR, TCS Research & Org. Infra.

Dr Anbu Rathinavel

Chief Design Officer, Intellect Design Arena Ltd

Dr G Sainarayanan

General Manager, HCL Technologies Ltd

11:30 am - 11:45 am

Best Paper Recognition Ceremony

11:45 am - 12:10 pm

Vote of Thanks

Dr B Anbuthambi

President, ICT Academy

PATRONS



Prof Ashutosh Sharma
Secretary - Department of Science and Technology
Government of India



Prof K K Aggarwal
Chairman
National Board of Accreditation



Dr Virander Singh Chauhan
Chairman
National Assessment and Accreditation Council



Prof Anil D Sahasrabudhe
Chairman
AICTE



Lakshmi Narayanan
Emeritus Vice Chairman, Cognizant
Chairman, ICT Academy



Hans Raj Verma IAS
Additional Chief Secretary (FAC) - IT Department
Government of Tamil Nadu



Sunita Sanghi IES
Senior Advisor - Ministry of
Skill Development
& Entrepreneurship, Government of India



M Vijayakumar IAS
Managing Director
Electronics Corporation of Tamil Nadu



Santosh K. Misra IAS
Commissioner - e-Governance
MD - Tamil Nadu e-Governance Agency



Krish Ganesan
Vice President - HR and Global Head Recruitment
Tata Consultancy Services



V Balakrishnan
Chairman
Microgram



M Sivakumar
Chief Executive Officer
ICT Academy

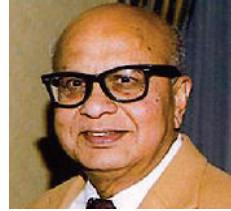
GLOBAL TECHNICAL ADVISORY COMMITTEE



Jayesh Ranjan IAS
In-charge Vice Chancellor
JNTU Hyderabad, India



Prof M Surappa
Vice Chancellor
Anna university, India



Prof Dr Bimal K Bose
Emeritus Chaired Professor
University of Tennessee, United States



Dr. Karisiddappa
Vice Chancellor
Visvesvaraya Technological University, India



Dr Rajasree M S
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APJ Abdul Kalam Technological University, India



Prof. S. Srinivas Kumar
Vice Chancellor
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Dr Sandeep Sancheti
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IIT Guwahati, India



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Prof A Govardhan
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Prof Yajulu Medury
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Mahindra University, India



Prof. Dhiraj Bora
Vice Chancellor, Assam Science and
Technology University



Prof John S Baras
Professor, University of Maryland
United States



Prof. Bjoern Schuller
Professor, Imperial College of London
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Vice Chancellor, Manonmaniam
Sundaranar University, India



Manav Sehgal
Head - Digital Innovation and National Programs
Amazon Web Services



Dr Viju Ravichandran
Head Education Technical Evangelist
MathWorks India



Ravishankar Rao
Head - Strategy and Operations India
CISCO



Prof Rakesh Kumar Sharma
Vice Chancellor
Graphic Era University



K Senthil Nayagam
SVP, Global Revenue Assurance &
Chief Learning Officer, Hexaware Technologies



Dr Anbu Rathinavel
Chief Design Officer
Intellect Design Arena Ltd



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Sify Technologies Ltd



M Sivakumar
Chief Executive Officer
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Shiv Ajagane
Vice President & Group Delivery Head -
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Viswanathan Venkat
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General Manager, Engineering and R&D
Services, HCL Technologies Ltd



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Founder and CTO
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Koodli Subramanya
Director - Industry Business Consultant
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Sopra Steria



CA V Pattabhi Ram
Partner
Yoganandh & Ram



Benedict Arockiasamy
Vice President - Learning and
Development, CSS Corp



Chandrashekar C
Senior Director - HR,
Virtusa



Dr B Anbuthambi
President
ICT Academy

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Principal & Professor
Dr. NGP Institute of Technology, Coimbatore



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Fatima College, Madurai



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Government College of Engineering, Salem



Dr S Prabakar
Professor & Head
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Dr. NGP Institute of Technology, Coimbatore



Dr M Madheswaran
Principal & Professor
Muthayammal Engineering College
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Dr Aniruddha Chandra
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Professor & Head, Department of EIE
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College, Coimbatore



Dr G Sakthivel
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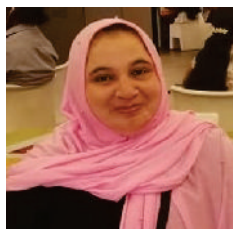
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Anna University, Coimbatore



Dr M Mohamed Iqbal
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PSG Institute of Technology
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Dr R Manimegalai
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PSG Institute of Technology
and Applied Research, Coimbatore

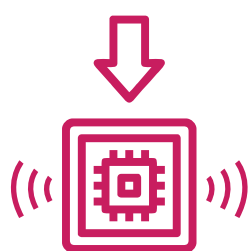


Dr J Akilandeswari
Professor & Head, Department of IT
Sona College of Technology, Salem

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