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ETHAMITES

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



ADITYA ENGINEERING COLLEGE

APPROVED BY AICTE NEW DELHI AND AFFILIATED TO JNTU KAKINADA

ABOUT THE DEPARTMENT OF ECE

The department of Electronics and Communication Engineering at Aditya strives to produce highly competent engineers equipped with advanced professional knowledge, entrepreneurial thinking, professional and ethical attitude, critical problem solving and analytical skills through effective teaching learning process, research and industrial collaboration and established as one of the major departments of the institute.

The faculty of the department, a rich blend with academic and industrial experience, have been constantly carrying out research on many cutting-edge technologies with regular publications in Springer, Elsevier and other top international journals. The academic quality of the department is reflected by the laurels won by the students and the distinguished positions in industry and academia occupied by alumni.

The department strives to upgrade the knowledge of faculty and students by organizing various Workshops, Industry-Institute Interactions, Continuous Improvement Programs inviting eminent personalities from Industry and academic Institutions, Seminars and Research activities.

VISION OF THE DEPARTMENT

• To empower the Electronics and Communication Engineering students with technological capability, professional commitment, and social responsibility.

MISSION OF THE DEPARTMENT

- Providing quality education through dedication to duty, best of breed laboratory facilities, collaborative ventures with the industries and effective teaching-learning process.
- Pursing research and promoting new technologies in order to serve the needs of the society, industry, government and scientific community.
- Equipping the students with strong foundations to enable them for continuing education.

PROGRAM EDUCATIONAL OBJECTIVES (PEO)

The graduates of the Program will

- PEO1: Adapt the learning culture needed for a successful professional career and pursue research.
- PEO2: Build modern electronic systems by considering technical, environmental and social contexts.

• PEO3: Communicate effectively and demonstrate leadership qualities with professional ethics.

5G AND BEYOND: WHERE ARE WE HEADING?

Internet is a network of networks that consists of private, public, academic, business, and government networks from local to global scope, linked by a broad array of electronic, wireless, and optical networking technologies.



2G is short form for second-generation cellular network. 2G cellular networks were commercially launched on the GSM standard in Finland by Radiolinja in 1991.

2G USES

GSM has enabled the users to make use of the short messaging services (SMS) to any mobile network at any time. SMS is a cheap and easy way to send a message to anyone, other than the voice call or conference. This technology is beneficial to both the network operators and ultimate users at the same time.

3G is the third generation of wireless mobile telecommunications technology. It is the upgrade for 2.5G GPRS and 2.75G EDGE networks, for faster data transfer.

3G USES

3G finds application in wireless voice telephony, mobile internet access, fixed wireless internet access, video calls and mobile TV. 3G telecommunication networks support services, that provide an information transfer rate of at least 144 kbps.

4G USES

4G is the shortened term for the fourth generation of the wireless data transmission networks set up by the mobile phone industry in order to offer more bandwidth and greater speeds for everyday mobile device operations, such as messaging, video calling and mobile TV.

5G AND THE FUTURE!

5G is the 5th generation mobile network that enables connecting virtually everyone and everything together including machines, objects and devices.

According to a study, 5G is expected to deliver speeds up to 100 times faster than typical 4G technology. As 5G technologies have been continuously evolving, it will certainly change the way we spend our lives. Our communications will be faster than we can imagine and our connections will be stronger, stable. But with such sky-high expectations also come some challenges.



When we imagine a future, powered by 5G, connected factory devices that "talk" to each other, mobile internet-connected to multiple devices at the same time, different vehicles communicating with the roads they travel on and accessibility of information at unprecedented speeds are coming to our mind, aren't they?

So, what next? 6G will try to offer a secure, stable and fast interconnected network of devices, speaking among themselves and of course interacting with us, the humans.

Yes, Smart Devices, Smart Cities and so a Smart life....is waiting

A.SURYA KANTHI III ECE-C 20A91A04J3

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INTERNET OF THINGS (IoT)

Another promising new technology trend is IoT. Many "things" are now being built with Wi-Fi connectivity, meaning they can be connected to the Internet and to each other. Hence, the Internet of Things, or IoT. The Internet of Things is the future, and has already enabled devices, home appliances, cars and much more to be connected to and exchange data over the Internet.

As consumers, we're already using and benefitting from IoT. We can lock our doors remotely if we forget to when we leave for work and preheat our ovens on our way home from work, all while tracking our fitness on our Fitbits. However, businesses also have much to gain now and in the near future. The IoT can enable better safety, efficiency and decision making for businesses as data is collected and analyzed. It can enable predictive maintenance, speed up medical care, improve customer service, and offer benefits we haven't even imagined yet.

And we're only in the beginning stages of this new technology trend: Forecasts suggest that by 2030 around 50 billion of these IoT devices will be in use around the world, creating a massive web of interconnected devices spanning everything from smartphones to kitchen appliances. The global spending on the Internet of Things (IoT) is forecast to reach 1.1 trillion U.S. dollars in 2022. New technologies such as 5G is expected to drive market growth in the coming years.

And if you wish to step foot in this trending technology, you will have to learn about Information security, AI and machine learning fundamentals, networking, hardware interfacing, data analytics, automation, understanding of embedded systems, and must have device and design knowledge

> A.GANESH BABU III YEAR ECE -C 20A91A04I9

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EDGE COMPUTING

Formerly a new technology trend to watch, cloud computing has become mainstream, withmajor players AWS (Amazon Web Services), Microsoft Azure and Google Cloud Platform dominating the market. The adoption of cloud computing is still growing, as more and more businesses migrate to a cloud solution. But it's no longer the emerging technology trend.

Edge is a quantity of data organizations are dealing with continues to increase, they have realized the shortcomings of cloud computing in some situations. Edge computing is designed to help solve some of those problems as a way to bypass the latency caused by cloud computing and getting data to a datacenter for processing. It can exist "on the edge," if you will, closer to where computing needs to happen. For this reason, edge computing can be used to process timesensitive data in remote locations with limited or no connectivity to a centralized location. In those situations, edge computing can act like mini datacenters.

Edge computing will increase as use of the Internet of Things (IoT) devices increases. By 2022, the global edge computing market is expected to reach \$6.72 billion. And this new technology trend is only meant to grow and nothing less, creating various jobs, primarily for software engineers.

PRATHIBA P III YEAR ECE -B 20A91A04B3

ROBOTIC PROCESS AUTOMATION

Like AI and Machine Learning, Robotic Process Automation, or RPA, is another technology that is automating jobs. RPA is the use of software to automate business processes such as interpreting applications, processing transactions, dealing with data, and even replying to emails. RPA automates repetitive tasks that people used to do.

Although Forrester Research estimates RPA automation will threaten the livelihood of 230 million or more knowledge workers, or approximately 9 percent of the global workforce, RPA is also creating new jobs while altering existing jobs. McKinsey finds that less than 5 percent of occupations can be totally automated, but about 60 percent can be partially automated.

For you as an IT professional looking to the future and trying to understand new technology trends, RPA offers plenty of career opportunities, including developer, project manager, business analyst, solution architect and consultant. And these jobs pay well.

U.EDUKONDALU 20A91A0455 IIIYEAR ECE - A

STUDENTS' ENGLISH POEMS

SPEAK!!

Step in your own way Think a lot to say!! Make the people happier and Give them something snappier!! Become a great speaker And be a peace seeker!!! Think... think... But don't get sink. When all admire. You shouldn't expire!!! Aware... aware... aware... You should also beware. The words of you... Must praise you!! If the speech of you is bold... The "Best speaker" you're told!!! The better way you practice People must write a thesis!!! So, dump your feelings... Which isn't a difficult dealing!!! So, get set ready... Your speech must be steady... Really everyone will study and This world would be your teddy!!!

> I. SRIVIDYA II ECE-D 21A91A04I4

MY FRIEND IN DISGUISE

The colourful rainbow to my colourless clouds; Theshining moon to my starless nights; The brightest sun to my darker days; Thepatting shoulders at my deep blues; The ice cream when my world turns up into a brownie; Thesauce to my messed up spaghetti;The other half to my broken half, Ismy BEST FRIEND in disguise.

> Y.Sridevi III ECE-A 20A91A0460









S.RAVI TEJA III ECE–D 20A91A04D8



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