

Aditya College of Engineering

Department of

Computer Science and Engineering

MANAARMS

Magazine

Academic Year 2019 - 20

Technology-The Future things



Editorial Board

Chief Editor:

Dr.G.S.N.MURTHY **HOD-CSE**

Editors:

Mrs.P.N.S.Lakshmi Asst.Professor Mrs.V.Neelima

Asst.Professor

Student Coordinators:

NARALASETTI RAJA - 17MH1A0541

PADAMATA MOHIT - 17MH1A0594

VATTIKUTI BHASKAR - 18MH1A05A8

BOMMANA M SAINADH - 19MH1A0570

Chairman's Message



I believe in the philosophy of thought, word and deed as eternal which made Aditya what it is today.

My thought to set a high bar to the institutions I setup by rising to the challenges of the educational field and get prepared for a life dedicated to the pursuit of knowledge. My word which always reflected my vision and gained the conviction of the heads of the institutes and parents. And my deed which makes my home and workplace as extensions of each other by considering the staff and students as the members of my extended family shaped Aditya

I know the value of a good education, more so because I did not have the benefit of the facilities that make the learning process smooth. I began my career as a lecturer, giving up my desire of qualifying in the Service Commission Examination. Out of my despair was born a strong determination which took the shape of Aditya Educational Institutions.

Challenges, Competition and the fear of failure are natural, but success embraces those who face these with the can-do attitude. For me this can-do attitude is backed up by our state-ofthe- art infrastructure, picturesque & inspiring setting and devoted team of faculty-members and administrators. The learning ambience at all the constituting Institutions is perfectly suited for all-round growth and academic excellence. Today, the group has a proud record of evolving efficient, confident and highly knowledgeable technocrats, managers, pharmacists and entrepreneurs with global thinking and futuristic mind-set.

The present-day job market poses fresh challenges that need to be managed innovatively. Global business Incubation centre, Microsoft Innovation Centre, Technical Skill Development Institute, T-hub, Training and Placement Cell, GATE coaching etc., act as perfect vehicles for this.

Vice-Chairman's Message



Dr. N SATHISH REDDY

As a direct product of Aditya I know how my father toiled to place Aditya on the academic map of the country through its various phases of expansion even under the most trying circumstances. My Masters degree from UTS Australia, the best university in the continent, has given me deeper understanding and insight into the education system. This was coupled with the ideology of my father which enabled me to take the onus of steering Aditya. In succession, Aditya technical campus, Surampalem has been established to offer professional education in Engineering, technology, management and pharmacy with the core concepts of quality and excellence

Ever since its inception in 2001, the campus has registered speedy progress by upholding its abiding commitment to advance knowledge and educate students in science and technology. The prime aim of the campus is to make teaching and research relevant to the practical world.

The campus offers numerous opportunities for the aspiring students which lay a strong foundation for the corporate world. T-Hub is a specimen of numerable opportunities provided to students with enough competitive inputs to become T-shaped engineers, facilitate internship opportunities on the campus, develop partnerships with corporate and etc. through its various programs.

The ultimate aim of Aditya is to make the campus the 'first stop' for companies in the recruitment process. Keeping in view the demands of the work nvironment which is beyond just knowledge and marks, a lot of emphasis is laid on the overall personality development of the students.

Finally a desire can change nothing, a decision can change something but a determination can change everything. For sure Aditya is strongly determined to provide its students a successful career

Principal's Message



"Those who educate children well are more to be honored than parents, for these only gave life, those the art of living well."

- Aristotle.

The significant problems we face cannot be solved at the same level of thinking we were at when we created them." - Albert Einstein. It is only through knowledge that man attains immortality. Knowledge has to expand or grow to remain knowledge. The road to excellence is toughest, roughest and steepest in the Universe. The world requires and honors only excellence. Available information has to be directed by wisdom and intelligence to create new knowledge. Promotion of creativity is the new role of education. It is only through creative thinking that the present and future problems can be addressed to find dynamic solutions.

Technology should be used to help remove poverty from the world. In fact 40% of the world's poor are in India. Confidence leads to capacity. It is faith in oneself that produces miracles. Education at ACOE helps build Character, Strengthen the mind, expand the intellect and establish a culture of looking at problems in a new perspective. The student is put through rigorous training so that he can stand on his own feet after leaving the portals of the Institute.

HOD Message



Dr.G.S.N.MURTHY M.Tech., Ph.D

The scope of computer science is endless. The students of the computer science and engineering are highly demanded by the recruiters of the top companies. Through innovative teaching-learning process a teamwork approach and leadership building experience, our students gain vital communication and critical-thinking skills. Our institution provides a platform for the students to enhance their employability skills through Industry Institute Collaboration.

Our Department

Department of Computer Science and Engineering has been successfully functioning since 2008. It offers B.Tech (Computer Science and Engineering) with an intake of 120 students and M.Tech (Computer Science and Engineering) with 18 students. Department of CSE good interactions and MOUs with leading has technology domain Training & Development Industries. Department of CSE under ACOE, signed pacts in the form of MoUs with Infosys (Campus Connect), Microsoft (Campus Agreement), APSSDC. It organizes Exhibitions, Conferences, Seminars and Workshops for both students and Faculty belonging to various Technical Educational Institutions all over India.Our students are placed in various top MNCs like Infosys, TCS, Tech Mahindra, Bijus, Wipro, Mindtree etc., for deserving & esteemed packages of more than 2.4 Lakhs to 19.0 Lakhs per Annum. Faculty of CSE are dedicated and devoted towards always comprehensive development of their students by training them physically through enough sports & games; psychologically through technical competitions globally. The department of CSE as a whole aims at the development of leading Computer Professionals with ethical values & societal concern.

Department Vision

To be a recognized Computer Science and Engineering hub striving to meet the growing needs of the Industry and Society

Department Mission

M1:

Imparting Quality Education through state-of-the-art infrastructure with industry collaboration.

M2:

Enhance Teaching Learning Process to disseminate knowledge.

M3:

Organize Skill based, Industrial and Societal Events for overall Development.

FDP Conducted

A Five Day Faculty Development workshop on Database Design and Programming with SQL







EDUCATION IS NOT Preparation FOR life; education IS life ITSELF. "

John Dewey

Y SAI SREE DURGA

17MH1A05B3

7.95 (2nd Place)

BANDARU SANGEETHA

17MH1A0505

8.23 (1st Place)

Internship Minutiae

s.NO	REG. NO	NAME OF THE PARTICIPANT	NAME OF THE COMPANY	YEAR
1	17MH1A0548	SRI KEERTY DRAKSHARAPU		
2	17MH1A0555	vedampudi jayasree	TECHNICAL HUB- SURAMPALEM	2019-2020
3	17MH1A0534	manda hema sree	3010 0111 712271	
4	17MH1A0564	chintalapudi sri sai divya teja		
5	17MH1A0565	CHIRIGINETI UMA MOUNIKA		
6	17MH1A05A3	sadu lakshmi vinuthna	UP CUBEX PVT.LIMITED- HYDERABAD	2019-2020
7	17MH1A05A9	pepakayala bhavyasri		
8	17MH1A0584	mattaparthi uma sujana		
9	18MH1A0555	YARRA VIJAYARAJU		
10	18MH1A0565	CH VENKATA SRIRAM		2019-2020
11	18MH1A0580	k b v manohar reddy	internsala	
12	18MH1A05A4	VALLEPU VEERA PRASAD		
13	18MH1A05A8	VATTIKUTI BHASKAR		
14	18MH1A0511	BATCHU SAI MANASA		
15	18MH1A0518	ch v c srisahithi		
16	18MH1A0528	GOLUGURI DEVI		
17	18MH1A0518	ch v c srisahithi	TECHNICAL HUB- SURAMPALEM	2019-2020
19	17MH1A0510	HIMAVARSHINI	2014 4111 12211	
20	17MH1A0585	MEDAPATI SRI LAKSHMI		
21	17MH1A0594	PADAMATA MOHIT		
22	17MH1A0501	aditya shasank pskpvs	OPENNETS-HYDERABAD	2019-2020
23	17MH1A05B0	V.VINOD KUMAR	LOGICORN TECH SERVICES (OPC) Pvt.Ltd-CHENNAI	2019-2020

Quotes'

"All power is within you. You can do anything and everything.
Believe in that. Do not believe that you are weak; do not believe that you are half-crazy lunatics, as most of us do nowadays. Stand up and express the divinity within you."

MAJJI TEVITT SAI -18MH1A0536

PLACEMENTS

S.NO	COMPANY NAME	DESIGNATION	CTC IN LAKHS	STUDENTS SELECTED
1	AMAZON AWS	CLOUD SUPPORT ASSOCIATE	19.00 LPA	2
2	BYJUS	BUSINESS DEVELOPMENT TRAINEE	10 LPA	1
3	DIVAMI	UX ENGINEER	3.20 LPA	6
4	DXC TECHNOLOGIES	ASSOCIATE PROFESSIONAL SOFTWARE ENGINEER	3.40 LPA	10
5	EIDIKO	TRAINEE ENGINEER	3.00 LPA	1
6	GGK TECH	TRAINEE SOFTWARE ENGINEER	2.40 LPA - 4.50 LPA	1
7	HEXAWARE TECHNOLOGIES	SOFTWARE ENGINEER TRAINEE	3.00 LPA	3
8	INFOSYS	SYSTEM ENGINEER TRAINEE	3.00 LPA	2
9	KEKA TECHNOLOGIES	TRAINEE SOFTWARE ENGINEER	6.00 LPA	10
10	LTI	GRADUATE ENGINEER TRAINEE	3.50 LPA	3
11	MAQ	TRAINEE ENGINEER	4.32 TO 6.00 LPA	1
12	MINDTREE	JUNIOR ENGINEER	3.54 LPA	3
13	RAYBIZ TECHNOLOGIES	TRAINEE ENGINEER	2.40 LPA	1
14	TCS NQT	ASSOCIATE ENGINEER	3.36 LPA	4
15	TECH MAHINDRA	ASSOCIATE SOFTWARE ENGINEER	3.25 LPA	6
16	T-SYSTEMS	TRAINEE ENGINEER	3.50 LPA	1
17	VAISHNAVI INFORMATION TECHNOLOGIES	TRAINEE ENGINEER	4.00 LPA	1
18	WEB SYNERGIES	TRAINEE ENGINEER	3 TO 3.2 LPA	2
19	WIPRO	TRAINEE ENGINEER	3.5 LPA	2
20	ZENQ	TRAINEE ENGINEER	2.80 TO 3.20 LPA	1



Placed:04 with CTC: 3.36 LPA



Placed:06 with CTC: 3.54 LPA

Special Congratulations



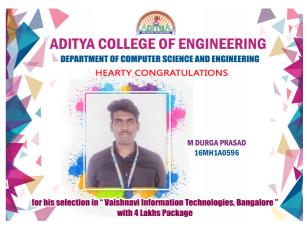


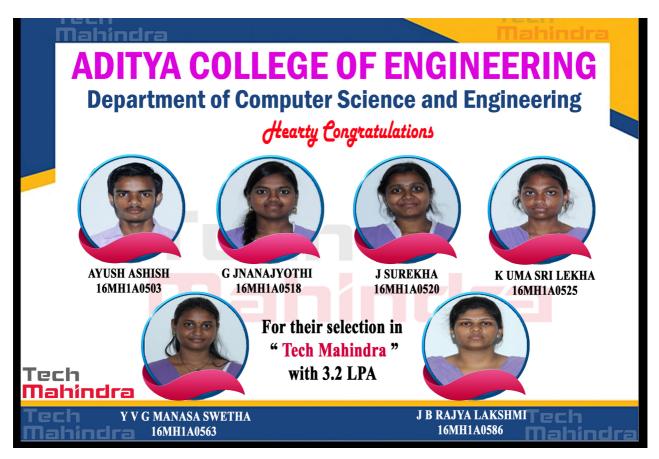








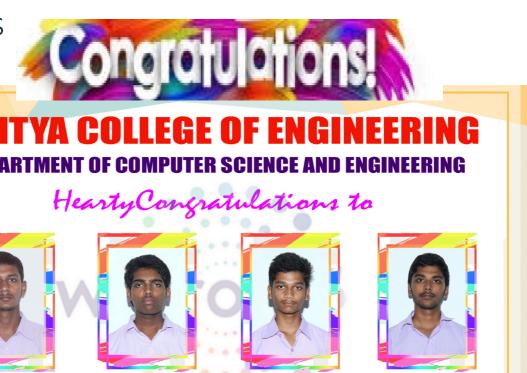








MANAARMS





M DURGA PRASAD 16MH1A0596



P N M SAI RAJA 16MH1A0442

K DHANA RAJU 16MH1A04F2



for their selection in " Wipro " with 3.50 LPA





Placed: 02 with CTC: 19.0 LPA



Placed:02 with CTC: 3.0 LPA



Placed:10 with CTC: 6.0 LPA



DXC.technology

Placed:10 with CTC: 3.40LPA

FACULTY - PATENTS

S. No.	Name of the Faculty	Patent details	Area of the patents files/obtained	Status	Filing Agency
1	Dr. Pullela SVV <mark>SR</mark> Kumar	A Novel IoT-Enabled Accident Deterrent and Tracking System.	Design	Filed	Intellectual
		Application Number:202041048017			Property India
2	Dr.G.S.N.Murthy	Quantum cryptography based method for security and cloud computing privacy in mobile.	Engineering	Filed	Intellectual Property India
		Application Number:201941041198			
3	Dr.B.Annapurna	An Automated And Integrated Mobile App For Handling Road accident And Emergency Situation Smartly.	Electrical	Filed	Intellectual Property India
	<u> V</u>	Application Number: 202041041120			
4	Dr. U.N.P.G.Raju	Effective Density-Based Clustering Methods For Streaming Data.	Communication	Filed	Intellectual Property India
		Application Number:202041006657			

Invited Lectures

S No.	Name of the faculty	Name of the event	Name of the topic addressed/ delivered	Date	Invited Organization/ institute
1	Dr. Pullela SVVSR Kumar	Guest Lecture	Distributed objects in group Communication	20 & 21 Nov,2019	Vishnu Institute of Technology, Bhimavaram

Member of External Bodies/Agencies

Sl. No.	Name of the Faculty	Name of the external body/ Agency (GB)	Position	Duration / Tenure
1	Dr. Pullela SVVSR Kumar	Aditya College of Engineering	GB Member	Till Date
2	Dr.G.S.N.Murthy	V.S.M.College(P.G.) Courses, Ramachandrapuram	BOS Member	3Yrs
3	Dr.G.S.N.Murthy	Ideal College(Vocational), Kakinada	BOS Member	3 Yrs

Professional Society Memberships

Sl. No.	Name of the Faculty	Name of the Professional Society	Membership Number	Life/Annual
1	Dr. Pullela SVVSR Kumar	Computer Society of India(CSI) – Institutional Membership	F8002532	Life
2	Dr. Pullela SVVSR Kumar	International Association of Engineers (IAENG)	163296	Life
3	Dr.G.S.N.Murthy	IAENG	164690	Life
4	Dr. G.S.N.Murthy	CSTA		Life
5	T.Veerraju	CSI	F8002533	Life
6	T.Veerraju	IAENG	164691	Life
7	T.Satya Kumari	IAENG	164689	Life
8	N Praveen	CSI Member	F8002534	Life

Faculty NPTEL Certifications

S.No	Name of the Faculty	Name of the Course	Dates/Duration
1	Dr. G.S.N.Murthy	Introduction to Machine Learning	July-Sept, 2019 (8 Weeks)
2	Dr. B. Annapuma	Object Oriented Analysis and Design	Aug-Oct, 2019 (8 Weeks)
3	Dr. B. Annapuma	Cloud Computing	Feb-Apr, 2020(8 Weeks)
4	T.Veerraju	Introduction to Machine Learning	July-Sept, 2019 (8 Weeks)
5	V.Chandra Sekhararao	An Introduction to Programming through C++	Jan-Apr, 2020 (12 Weeks)
6	V.Anantha Lakshmi	Programming Data Structures & Algorithms using Python	July-Sept, 2019 (8 Weeks)
7	Dr.U.N.P.G.Raju	Python for Data Science	Aug-Sep, 2019 (4 Weeks)
8	A.Rama Devi	Programming Data Structures & Algorithms using Python	July-Sept, 2019 (8 Weeks)
9	T.Satya Kumari	Python for Data Science	Aug-Sep, 2019 (4 Weeks)
10	T.Satya Kumari	Introduction to Operating Systems	July-Sept, 2019 (8 Weeks)
11	N Praveen	Introduction to Internet of Things	July-Oct,2019 (12 weeks)
12	N Praveen	Software Testing ORTANCE OF —	Jan-Feb, 2020 (4 Weeks)
13	N.Madhuri	Programming Data Structures & Algorithms using Python	July-Sep, 2019 (8 Weeks)
14	PNS Lakshmi	The joy of Computing using Python	Jan-April, 2020 (8 Weeks)
15	S.Sai Ganesh	Introduction to Machine Learning	July-Sept, 2019 (8 Weeks)
16	V Veera Prasad	Compiler Design	Jan-Apr, 2020 (12 Weeks)
17	A.Krishhna Veni	Introduction to Internet of Things	July-Oct,2019 (12 weeks)
18	A.Krishhna Veni	Software Testing	Jan-Feb, 2020(8 Weeks)
19	P.Hema Venkata Ramana	Introduction to Internet of Things	July-Oct,2019 (12 weeks)
20	V.Neelima	Introduction to Internet of Things	July-Oct,2019 (12 weeks)





Elite Silver 06 Elite 10

Faculty Achievements

Faculty FDPs Attended

S.ma	Name of the Faculty	Name of the FDP	Organized by	Иасс	Duration
	,		,		
i	Dr. B. Annaguma	Artificial Intelligence and its Applications	RamaChandra College of Engineering	Eluru	25.05.2020 to 30.05.2020
2	T.Satya Kumari	Artificial Intelligence	BVRIT College of Engg, For Women	Hyderabad	22.05.2020 to 26.05.2020
3	T.Satya Kumari	Cyber Security and Digital Forensies	International School of Technology & Science For Women	Online	21.05.2020 to 23.05.2020
4	T.Satya Kumari	Internet of Things	Anumg University	Hyderabad	28.05.2020 to 30.05.2020
5	N Prayeen	Internet of Things (IoT)	Anumg University	Online	28.05.2020 to 30.05.2020
6	N Prayeen	Cyber security & Digital Forensies	ISTS School of technical sciences for Women	Online	21.05.2020 to 23.05.2020
7	N Prayton	Digital Marketing	Tilak College of Science and Commerce, Vashi	Online	03.05.2020
8	P N S Lakahasi	Python Programming	APSSDC	Surampalem	15.10.2019 to 19.10.2019
9	P N S Lakahmi	Cyber Security and Digital Forensics	ISTS	Online	21.05.2020 to 23.05.2020
10	P N S Lakahmi	Three Day online faculty development program on lo T	Anumg University	Hyderabad	28.05.2020 to 30.05.2020
11	V Veens Presed	Cyber Security & Malware Analysis	Giet College Of Engineering	Rajamahendravaram	28.05.2020 to29.05.2020
12	V Veera Prand	Cyber Security & Digital Forensies	International School OfTechnology & Science For Women	Rajanagaram	21.05.2020 to 23.05.2020
13	V Veers Presed	Machine Learning	APSSDC	Surangalem	22.10.2019 to 26.10.2019
14	V Vccra Prarad	Internet Of Things	Anumg University	Hyderabad	28.05.2020 to 30.5.2020
15	A. Krishna Veni	Internet of Things	Anumg University	Online	28.05.2020 to 30.05.2020
16	A. Krishna Veni	Machine Learning & Artificial Intelligence	Andhra Loyo'k Institute of Engineering & Technology, Vijayawada	Online	04.05.2020 to 06.05.2020
17	A. Krishna Veri	Digital Marketing	Tilak College of Science and Commerce, Vashi	Online	03.05.2020
18	V.Neclima	Machine Learning and Artificial Intelligence	Andhra Loyols Institute of Engineering and Technology	Online	04.05.2020 to 06.05.2020

Summary of FDPs Attended

S.no	Name of the Faculty	No.of FDPs Attended
1	Dr. B. Annapurna	1
2	T.Satya Kumari	3
3	N Praveen	3
4	PN S Lakshmi	3
5	V Veera Prasad	5
6	A.Krishna Veni	3
7	V.Neelima	1

To Qualified NET



Faculty Publications

S. No.	Name of the Faculty Author	No.of Journals	Index Type
1	Dr. G.S.N.Murthy	1	Scopus
2	Dr. B. Annapurna	3	Scopus
3	T.Veerraju	1	Scopus
4	M.Uma Devi	2	Scopus
5	V.Anantha Lakshmi	1	Scopus
6	Dr.UdayabhanuN.P.G.Raju	1	Scopus
7	T.Satya Kumari	1	Scopus



A teacher takes
a Hand, opens
a Mind and
touches a Heart

Computer Science and Engineering

Blockchain Technology

KODURI PAVAN KALYAN -18MH1A0578

What is blockchain and how does it work?

First and foremost, blockchain is a public electronic ledger built around a P2P system that can be openly shared among disparate users to create an unchangeable record of transactions, each time-stamped and linked to the previous one. Every time a set of transactions is added, that data becomes another block in the chain (hence, the name).

Blockchain can only be updated by consensus between participants in the system, and once new data is entered it can never be erased. It is a write-once, append-many technology, making it a verifiable and auditable record of each and every transaction.

While it has great potential, blockchain technology development is still early days; CIOs and their business counterparts should expect setbacks in deploying the technology, including the real possibility of serious bugs in the software used atop blockchain. And as some companies have already discovered, it's not the be-all solution to many tech problems.

Blockchain standards organizations, universities and start-ups have proposed newer consensus protocols and methods for spreading out the computational and data storage workload to enable greater transactional throughput and overall scalability – a persistent problem for blockchain. And the Linux Foundation's Hyperledger Project has created modular tools for building out blockchain collaboration networks.

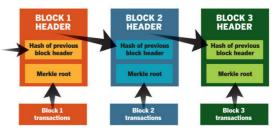
While some industry groups are working toward standardizing versions of blockchain software, there are also hundreds of startups working on their own versions of the distributed ledger technology.

Each digital record or transaction in the electronic ledger is called a block. When a block is completed, it

creates a unique secure code that ties it to the next block.

Why has blockchain been getting so much buzz? In a word, bitcoin – the wildly hyped cryptocurrency that allows for payment transcations over an open network using encryption and without exposing the identities of individual bitcoin owners. It was the first ever decentralized one when it was created in 2009. Other forms of cryptocurrency or virtual money, such as Ether (based on the Ethereum blockchain application platform), have also gained significant traction and opened new venues for cross-border

With blockchain technology, each page in a ledger of transactions forms a block. That block has an impact on the next block or page through cryptographic hashing. In other words, when a block is completed, it creates a unique secure code, which ties into the next page or block, creating a chain of blocks, or blockchain.



SIMPLIFIED BITCOIN BLOCK CHAIN

monetary exchanges. (Ethereum was introduced in 2013 by developer Vitalik Buterin, who was 19 at the time.)

For more than a year, however, Bitcoin has been on a roller coaster ride, with its value dropping from a peak of nearly \$20,000 to a little more than \$3,500, mainly due to the fact that it has no intrinsic value; its worth is based only on high demand and limited supply. Unlike fiat currencies or stocks, there is no institution or government backing the value

of bitcoin. That may change for cryptocurrencies someday.

Governments have already made overtures toward creating stablecoins, or cryptocurrency that's backed by a stable asset such a gold or traditional fiat currency. Blockchain is also being used to digitize other assets, such as cars, real estate and even artwork.

<u>Blockchain</u>, or distributed ledger technology, isn't a single technology. Rather it's an architecture that allows disparate users to make transactions and then creates an unchangeable, secure record of those transactions.



Autonomous Driving

The future is ultimately unknowable, but planning requires predictions of impending conditions and needs (Shaheen, Totte and Stocker 2018). Many decision-makers and practitioners (planners, engineers and analysts) wonder how autonomous (also called self-driving or robotic) vehicles will affect future travel activity and development patterns, and therefore the need for road and parking facilities and public transit services, whether public policies should encourage or restrict their use (APA 2016; Grush and Niles 2018; Guerra 2015; Kockelman and Boyles 2018; Levinson 2015; Milakis, van Arem and van Wee 2017; Sperling 2017).

There is considerable uncertainty about these issues. Optimists predict, based on experience with previous technological innovations, such as digital cameras and smart phones, that autonomous vehicles will soon be sufficiently reliable and affordable to replace most human driving, providing independent mobility to non-drivers, reducing driver stress, and be a panacea for congestion, accident and pollution problems (Johnston and Walker 2017; Keeney 2017; Kok, et al. 2017). There are good reasons to be skeptical of such claims.

Optimistic predictions often overlook significant obstacles and costs. Many technical problems must be solved before autonomous vehicles can operate in all conditions, including inclement weather, unpaved roads and beyond wireless access (Knight 2020). In order to be successful they will require testing and regulatory approval, and must become affordable and attractive to consumers. Motor vehicles are costly, durable, and highly regulated, so new vehicle technologies generally require decades to penetrate fleets. A camera, telephone or Internet failure may be frustrating but is seldom fatal; motor vehicles system failures can be frustrating and deadly to occupants and other road users. Autonomous driving can induce additional vehicle travel which can increase traffic problems. As a result, autonomous vehicles will probably take longer to develop and provide smaller net benefits than optimists predict.



Driving in mixed traffic involves numerous interactions with diverse pedestrians, animals, bicyclists and vehicles, and so is more complex than flying an airplane. (Keith Shaw)



Waymo's self-driving taxis are a well-publicized example of autonomous vehicles.

This has important policy implications (Papa and Ferreira 2018; Speck 2017). Vehicles rely on public infrastructure and impose external costs, and so require more public planning and investment than most other technologies. For example, autonomous vehicles can be programed based on user preferences (maximizing traffic speeds and occupant safety) or community goals (limiting speeds and risks to other road users), and many predicted autonomous vehicle benefits, including congestion and pollution reductions, require dedicated lanes to allow platooning (numerous vehicles driving close together at relatively high speeds). Policy makers must decide how to regulate and price autonomous driving, and when community benefits justify dedicating traffic lanes to their exclusive use.

This report explores these issues. It investigates, based on experience with previous vehicle technologies, how quickly self-driving vehicles are likely to be developed and deployed, critically evaluates their benefits and costs, and discusses their likely travel impacts and their implications for planning decisions such as optimal road, parking and public transit supply.

SATHI SAHITHI - 17MH1A0546



Array Of Things(AOT) Introduction:

The Array Of Things is a collaborative effort to collect the real-time data on environment, infrastructure and public use

• It is a networked sensor system.

Why AOT is used?

• The Array of Things (AoT) is an urban sensing network of programmable, modular nodes that will be installed around cities to collect real-time data on the city's environment, infrastructure, and activity for research and public use. AoT will essentially serve as a "fitness tracker" for the city, measuring factors that impact livability in cities such as climate, air quality and noise.

Goals of AOT:

• AoT will provide real-time, location-based data about urban environment, infrastructure and activity to researchers and the public. This initiative has the potential to allow researchers, policymakers, developers and residents to work together and take specific actions that will make cities healthier, more efficient and more livable

The data will help cities operate more efficiently and realize cost savings by anticipating and proactively addressing challenges such as urban flooding and traffic safety Because the data will be published openly and without charge, it will also support the development of innovative applications, such as a mobile application that allows a resident to track their exposure to certain air contaminants, or to navigate through the city based on avoiding urban heat islands, poor air quality, or excessive noise and congestion.

Tecnology used in AOT:

- Array of Things also serves as the flagship deployment of an innovative new type of cyberinfrastructure -- a distributed, programmable system of nodes that can be used to answer critical research questions across different settings and fields of study.
- AoT is based upon Waggle technology, an open platform for edge computing and intelligent, wireless sensors developed at Argonne National Laboratory. In addition to AoT and other urban research initiatives, Waggle software and hardware supports environmental and atmospheric science in a variety of environments

Data collected by AOT:

• The nodes will initially measure temperature, barometric pressure, light, vibration, carbon monoxide, nitrogen dioxide, sulfur dioxide, ozone, ambient sound intensity, and pedestrian and vehicle traffic. Continued research and development is using machine learning to create sensors to monitor other urban factors of

interest such as flooding and standing water.

• It has a privacy protection is built into the design of the sensors and into the operating policies.

Data availability on device: Data collected by AoT is open, free, and available to the public. The nodes transmit data to a secure central database server at Argonne National Laboratory(in Chicago). Data is then published openly to allow individuals, organizations, researchers, engineers and scientists to study urban environments, develop new data analysis tools and applications, and inform urban planning.

Data security in AOT:

- Policy and operational activities are guided by the Array of Things, EOC committee that's under the government.
- Any changes to privacy, such as additional image processing algorithms or sensors that could potentially have privacy implications, require the approval of the government and then the AoT EOC, as outlined in the operation of Array of Things is governed by our privacy policies.
- The EOC draws upon external technical security and privacy expertise through the Technical Security and Privacy Group and Operating as an external, independent review team, the committee will also be consulted whenever there is a request for a new kind of data to be collected.

Applications of AOT:

- Sensors monitoring air quality, sound and vibration (to detect heavy vehicle traffic), and temperature can be used to suggest the healthiest and unhealthiest walking times and routes through the city, or to study the relationship between diseases and the urban environment. -Real-time detection of urban flooding can improve city services and infrastructure to prevent property damage and illness.
- Measurements of micro-climate in different areas of the city, so that residents can get up-to• date, high-resolution "block-by-block" weather and climate information.
- •Observe which areas of the city are heavily populated by pedestrians at different times of day to suggest safe and efficient routes for walking late at night or for timing traffic lights during peak traffic hours to improve pedestrian safety and reduce congestion-related pollution.

How nodes are installed:

- This nodes are installed to an electric poles, traffic signal poles, and industry etc public places
- This nodes stores the data by using the sensors devices
- These sensors do not have the capability to measure or identify individuals.
- Microphones and cameras in public spaces do not collect sensitive personally identifiable information (PII). Microphone and camera images will be processed in near-real-time within the installed equipment, not transmitted or stored, with the exception of less than 1 % of images at random times, saved for the purposes of image processing software calibration. Although these images will not contain PII, they will be controlled and protected with the same measures typically afforded PII.

Sensors used:

• Honey well • SPEC Sensors 3SP-C0-1000 SPEC Sensors IAQ-100 etc...

Celebrations

Women's Day Celebrations





Water Conservation - Godavary Yatra in Andhra Pradesh By S**ri Rajendra Singh**, Water Man of India, Raman Magsaysay Awardee.





Sports & Games



Inauguration of Chess Competition
Event by our honorable
Principal Sir





NEW KABADDI COURT OPENING CEREMONY

DEPARTMENT OF PHYSICAL EDUCATION





ADITYA COLLEGE OF ENGINEERING