A.V.C COLLEGE OF ENGINEERING, MANNAMPANDAL

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

"FORCE (FORum of Computer science and Engineers') Newsletter"

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HOD'S DESK

Technology is constantly updating at such a rapid pace that it seems it is might be faster than light! A technology or a programming language that is making the rounds this week may be obsolete by the next few days! As more and more funds are invested in research and development, computer scientists and professionals are constantly tweaking and improving existing technologies to get the most out of them. As a result, a new programming language, library or plug-in gets released almost every hour. To keep up with this crazy pace of development, you have to keep learning the latest technology concepts.

"May this year bring new happiness, new goals, new achievements, and many new inspirations to your life. Wishing you a year fully loaded with happiness"

Dr.S.Padmapriya, HOD/CSE

Faculty Corner

DATA SCIENCE

Mr.A.VIVEKANANDAN, AP/CSE

Introduction:

Data science is an interdisciplinary field that uses scientific methods, processes, algorithms, and systems to extract knowledge and insights from many structural and unstructured data. Data science is related to data mining, machine learning, and big data.

Data science is a deep study of the massive amount of data, which involves extracting meaningful insights from raw, structured, and unstructured data that is processed using the scientific method, different technologies, and algorithms. It is a multidisciplinary field that uses tools and techniques to manipulate the data so that you can find something new and meaningful. Data science uses the most powerful hardware, programming systems, and most efficient algorithms to solve the data related problems. It is the future of artificial intelligence.

In short, data science is all about:

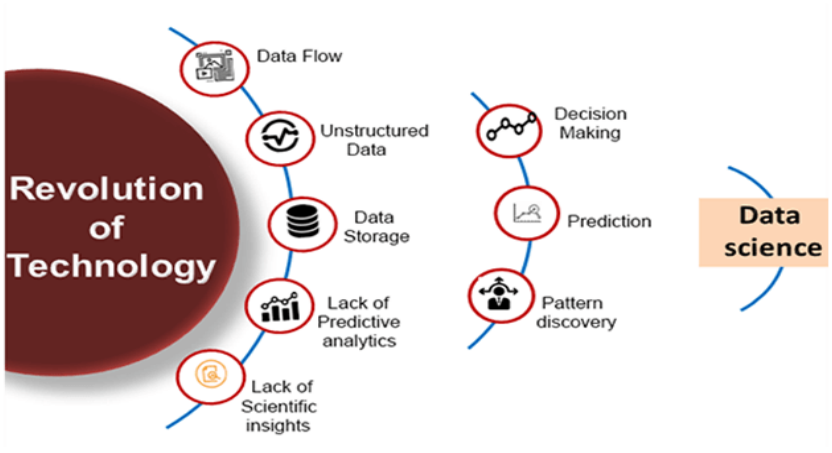
- Asking the correct questions and analyzing the raw data.
- Modeling the data using various complex and efficient algorithms.
- Visualizing the data to get a better perspective.
- Understanding the data to make better decisions and finding the final result.

Fig.No.1.Data Science

Need for Data Science:

Handling of such huge amount of data is a challenging task for every organization. So to handle, process, and analysis of this, we required some complex, powerful, and efficient algorithms and technology, and that technology came into existence as data Science.

Fig.no.2.Need for Data Science



Main reasons for using data science technology:

- With the help of data science technology, we can convert the massive amount of raw and unstructured data into meaningful insights.
- Data science technology is opting by various companies, whether it is a big brand or a startup. Google, Amazon, Netflix, etc, which handle the huge amount of data, are using data science algorithms for better customer experience.
- Data science is working for automating transportation such as creating a self-driving car, which is the future of transportation.
- Data science can help in different predictions such as various survey, elections, flight ticket confirmation, etc.

Tools for Data Science

- **Data Analysis tools:** R, Python, Statistics, SAS, Jupyter, R Studio, MATLAB, Excel, RapidMiner.
- **Data Warehousing:** ETL, SQL, Hadoop, Informatica/Talend, AWS Redshift
- **Data Visualization tools:** R, Jupyter, Tableau, Cognos.
- **Machine learning tools:** Spark, Mahout, Azure ML studio.

INTERNET OF BEHAVIOUR (IoB)

Student Corner

R.VIGNESHWARAN, IV CSE

Introduction:

Internet of Behavior, also known as IoB, refers to the behavioral data analysis gathered from the Internet of Things and other sources and then attempts to make effective use of. This data is amassed through wearable technologies, individual online activities, household electrical devices, which can provide valuable information about the behavior and interest of users.

With the help of both IoT and IoB, it has become possible now to track, gather, combine and interpret massive data generated via various online activities and personal behavior, including social media behaviors and commercial transactions.

Importance of Internet of Behavior

The internet of behavior emergence is providing everyone more opportunities to collect data and analyze it. The main purpose of the IoB is to collect, analyze, respond and understand all types of behaviors to improve customer/user experience. Other than that, behavioral data is also helping businesses to make more informed decisions and improve their service quality and value chain in the best possible way. The IoB has become a new yet powerful tool for businesses' sales and marketing worldwide. With this, businesses can get a deep understanding of their customers to keep them more satisfied.

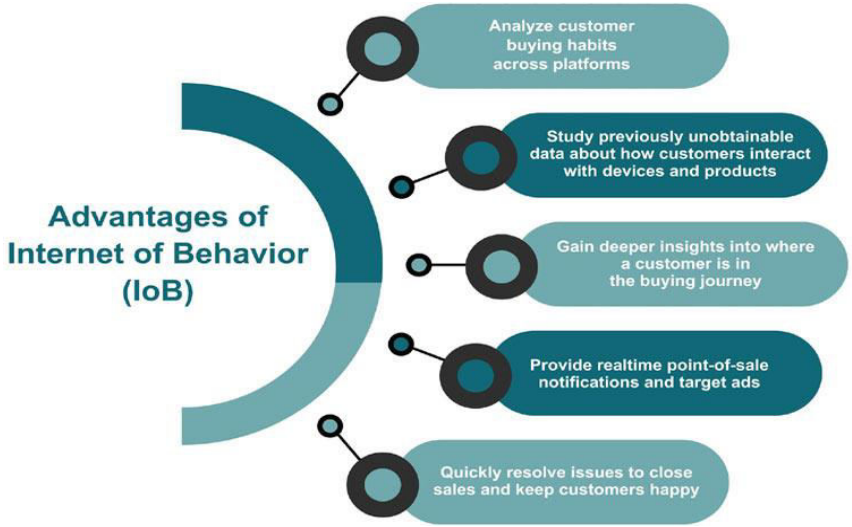
Fig.No.1. Diagram for IoB

Role & Contribution of Internet of Behavior

IoB helps in capturing, analyzing, understanding, and responding to all types of human behavior in a way that allows tracking and interpreting the behavior of people. It helps in analyzing user behavior and detecting which psychological variables to influence to bring about a certain outcome. It influences consumer choice and enables companies to improve the customer experience of the products/services they offer. Improving efficiency and quality is the main aim of IoB.

The Internet of Behavior can be considered as a combination of three fields viz. technology, data analytics, and behavioral science**.** Behavioral science can further be divided into four areas that we consider when we use technology. These are decisions, emotions, augmentations, and championships**.** For example, the health app on your Smartphone can help you keep track of your sleeping patterns, blood sugar levels, or heart rate. The app can alert you to adverse health situations and suggest behavior changes for the positive and desired outcome.

Fig.No.2. Advantages of IoB

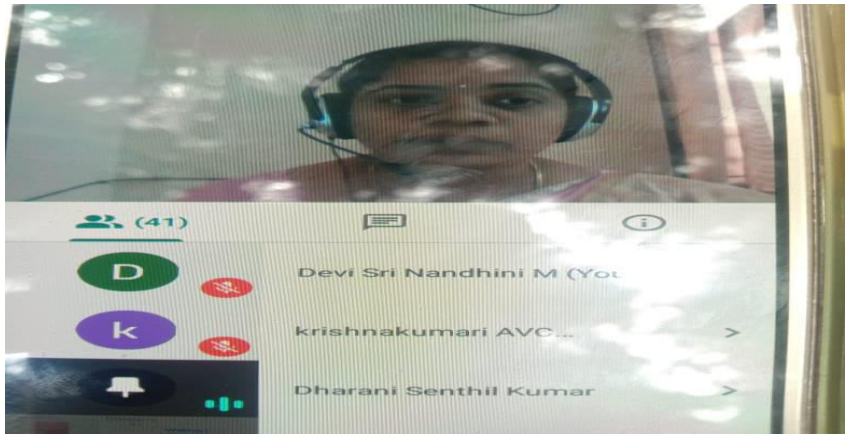


Advantages of Internet of Behaviour

- Positively engaging customers
- Knowing where the customer's interest in a product begins
- Their journey of purchase, and
- The methodology they use to make their purchase

DEPARTMENT SPOTLIGHTS

- Our Department conducted a Webinar on “Accelerate your Career in Data Science" by Dr.Dharani Senthilkumar, Vani Analytics, Chennai in 20/9/2020 at 10 am. Totally 73 Students had participated in this webinar.



Push your ideas to

Faculty: M.Kavitha,AP/CSE

Student Coordinator:

1. M.Kanagaraj, IV CSE
2. J.Rukshana Safrin, III CSE
3. G.U.Samyuktha, II CSE

Editors-Force Newsletter

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Institution Vision

To blossom into a cynosure of technological innovations.

Mission

To participate in the noble cause of nation building by offering professional education, research and training in engineering and technology especially to the rural based poor students.

Department Vision:

To excel in the field of Computer Science and Engineering with technological innovations.

Department Mission:

1. To impart quality technical education to the students through creative teaching learning process especially to the rural based students.

2. To create facilities and expertise in cutting-edge computer technologies through industry institute partnership.

3. To motivate the students to apply their innovative ideas to construct research models.

4. To transform the students into socially and ethically responsible professionals.

Programme Educational Objectives (PEOs):

Graduates of this B.E Computer Science and Engineering will be able to

PEO 1: To enable graduates to pursue higher education and research, or have a successful career in industries associated with Computer Science and Engineering, or as entrepreneurs.

PEO 2: To ensure that graduates will have the ability and attitude to adapt to emerging technological changes.

PEO 3: To effectively communicate ideas in oral or written and to promote collaboration with other members of engineering teams.

Programme Outcomes (POs):

By the time of graduation, graduates will attain the following programme outcomes:

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one‘s own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Objectives (PSOs)

1. To analyze, design and develop computing solutions by applying foundational concepts of Computer Science and Engineering

2. To apply software engineering principles and practices for developing quality software for scientific and business applications

3. To adapt to emerging Information and Communication Technologies (ICT) to innovate ideas and solutions to existing/novel problems.