Department of Computer Engineering with specialization in Data Engineering

Data Is Plural

"A data scientist is that unique blend of skills that can both unlock the insights of data and tell a fantastic story via the data."

--Dhanurjay Patil

Created By Khushal & Dhruvi

"You Can Have Data Without Information But You Can't Have Information Without Data"

--Daniel Keys Moran

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Contact *Us databuzz21@gmail.com*

Universal College of Engineering
Vidya Vikas Education Trust's

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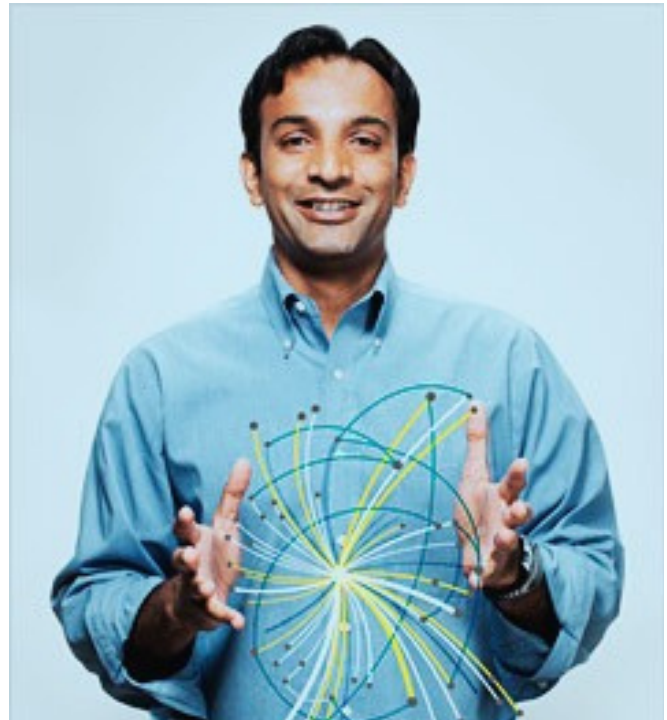(Permanently Unaided | Approved by AICTE, DTE & Affiliated to University of Mumbai)
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VISION

To build a learning and research environment in the field of Data Engineering that promotes learning towards betterment of the society.

Mission

To provide an academic environment for the development of profession in the field of Data Engineering.

To educate students in technology competencies by providing professionally committed faculty and staff.

To inculcate ethical values and leadership abilities in the students to work towards the progress of the society.

AREA OF STUDY IN DATA ENGINEERING

- *Introduction to Data Engineering*
- *Basic Language Requirement: Python*
- *Solid Knowledge of Operating Systems*
- *In-Depth Database Knowledge — SQL and NoSQL*
- *Data Warehousing — Hadoop, MapReduce, HIVE, PIG, Apache Spark, Kafka*
- *Basic Machine Learning Familiarity*

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TRENDS FOR 2022

Changes and Trends in Data World for 2022

There's nothing constant in our lives but change. Over the years, we've seen how businesses have become more modern, adopting the latest technology to boost productivity and increase the return on investment.

Data analytics, big data, artificial intelligence, and data science are the trending keywords in the current scenario. Enterprises want to adopt data-driven models to streamline their business processes and make better decisions based on data analytical insights.

With the pandemic disrupting industries around the world, SMEs and large enterprises had no option but to adapt to the changes in less time. This led to increasing investments in data analytics and data science. Data has become the center point for almost every organization.

As businesses rely on data analytics to avoid and overcome several challenges, we see new trends emerging in the industries.

TOP DATA SCIENCE & AI TRENDS FOR 2022

1. MLOPS WILL ACQUIRE WEIGHT IN OPERATIONALISING AND SCALING AI/ML
2. RESPONSIBLE AI WILL GAIN SIGNIFICANCE IN INDIA
3. DEARTH OF DATA ENGINEERS WILL BE FELT MORE THAN DATA SCIENTISTS
4. LARGE LANGUAGE MODELS WILL BECOME LARGER
5. FURTHER FORMALISATION OF DATA SCIENCE EDUCATION WILL LEAD TO SPECIALISED COURSES
6. HOLISTIC DATA FABRICS WILL BE AT THE CENTRE OF REDEFINING DATA STRATEGY
7. DATA SCIENCE INDUSTRY WILL SEE A CONSOLIDATION OF MORE IPOS OR ACQUISITIONS
8. ANALYTICS PROFESSIONALS WILL COMMAND HIGHER SALARIES
9. NEW AGE ALGORITHMS WILL SEE HIGHER UTILISATION IN INDUSTRIES
10. EFFORTS IN AI/ML LOCALISATION WILL IMPROVE

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17 Most important trends of data science in 2022

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10 Habits we should Learn from Highly Effective Data Scientists

According to Madison Hunter (Software engineer), there are 15 Habits we should Learn from Highly Effective Data Scientists which can help us in building our future. She herself is using these habits in 2021 to become a more effective future data scientist.

1. Stay up to date with technology.

How many current data science technologies arose only in the last ten or so years? Pretty much most of them.
By entering into the realm of data science with the motivation that you're going to take a good crack at it, you've relegated yourself to a lifetime of constant learning. Don't worry, it's not as bleak as it sounds.
However, what should be kept in the back of your mind at all times is that to remain relevant in the workforce, you need to stay up to date with technology. So, if you've been doing data analysis with MATLAB your whole career, try learning to code in Python. If you've been creating your visualizations with Matplotlib, try using Plotly for something fresh.

2. Emphasis on Actionable Data

What use is data in its raw, unstructured, and complex format if you don't know what to do with it? The emphasis is on actionable data that brings together big data and business processes to help you make the right decisions.
Investing in expensive data software will not give any results unless the data is analyzed to derive actionable insights. It is these insights that help you in understanding the current position of your business, the trends in the market, the challenges and opportunities, etc. Actionable data empowers you to become a better decision-maker and do what's right for the business. From arranging activities/ jobs in the enterprise, streamlining the workflows, and distributing projects between teams, insights from actionable data help you increase the overall efficiency of the business.

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3. Data as a Service- Data Exchange in Marketplaces

Data is now being offered as a service as well. How is that possible?

You must have seen websites embedding Covid-19 data to show the number of cases in a region or the number of deaths, etc. This data is provided by other companies that offer data as a service. This data can be used by enterprises as a part of their business processes.

Since it might lead to data privacy issues and complications, companies are coming with procedures that minimize the data risk of a data breach or attract a lawsuit. Data can be moved from the vendor's platform to the buyer's platforms with little or no disturbance and data breach of any kind. Data exchange in marketplaces for analytics and insights is one of the prominent data analytics trends in 2022. It is referred to as DaaS in short.

4. Use of Augmented Analytics

What is augmented analytics? AA is a concept of data analytics that uses AI, machine learning, and natural language processing to automate the analysis of massive data. What is normally handled by a data scientist is now being automated in delivering insights in real-time.

It takes less time for enterprises to process the data and derives insights from it. The result is also more accurate, thus leading to better decisions. From assisting with data preparation to data processing, analytics, and visualization, AI, ML, and NLP help experts explore data and generate in-depth reports and predictions. Data from within the enterprise and outside the enterprise can be combined through augmented analytics.

5. Cloud Automation and Hybrid Cloud Services

The automation of cloud computing services for public and private clouds is achieved using artificial intelligence and machine learning. AIOps is artificial intelligence for IT operations. This is bringing a change in the way enterprises look at big data and cloud services by offering more data security, scalability, centralized database and governance system, and ownership of data at low cost.

One of the big data predictions for 2022 is the increase in the use of hybrid cloud services. A hybrid cloud is an amalgamation of a public cloud and a private cloud platform.

Public clouds are cost-effective but do not provide high data security. A private cloud is more secure but expensive and not a feasible option for all SMEs. The feasible solution is a combination of both where cost and security are balanced to offer more agility. A hybrid cloud helps optimize the resources and performance of the enterprise.

6. Focus on Edge Intelligence

Gartner and Forrester have predicted that edge computing will become a mainstream process in 2022. Edge computing or edge intelligence is where data analysis and data aggregation are done close to the network. Industries wish to take advantage of the internet of things (IoT) and data transformation services to incorporate edge computing into business systems.
This results in greater flexibility, scalability, and reliability, leading to a better performance of the enterprise. It also reduces latency and increases the processing speed. When combined with cloud computing services, edge intelligence allows employees to work remotely while improving the quality and speed of productivity.

7. Hyperautomation

Another dominant trend in data science in 2022 is hyper-automation, which began in 2020. Brian Burke, Research Vice President of Gartner, has once said that hyper-automation is inevitable and irreversible, and anything and everything that can be automated should be automated to improve efficiency.

By combining automation with artificial intelligence, machine learning, and smart business processes, you can unlock a higher level of digital transformation in your enterprise. Advanced analytics, business process management, and robotic process automation are considered the core concepts of hyper-automation. The trend is all set to grow in the next few years, with more emphasis on robotic process automation (RPA).

8. Use of Big Data in the Internet of Things (IoT)

Internet of Things (IoT) is a network of physical things embedded with software, sensors, and the latest technology. This allows different devices across the network to connect with each other and exchange information over the internet. By integrating the Internet of Things with machine learning and data analytics, you can increase the flexibility of the system and improve the accuracy of the responses provided by the machine learning algorithm.

While many large-scale enterprises are already using IoT in their business, SMEs are starting to follow the trend and become better equipped to handle data. When this occurs in full swing, it is bound to disrupt the traditional business systems and result in tremendous changes in how business systems and processes are developed and used.

9. Automation of Data Cleaning

For advanced analytics in 2022, having data is not sufficient. We already mentioned in the previous points how big data is of no use if it's not clean enough for analytics. It also refers to incorrect data, data redundancy, and duplicate data with no structure or format.

This causes the data retrieval process to slow down. That directly leads to the loss of time and money for enterprises. On a large scale, this loss could be counted in millions. Many researchers and enterprises are looking for ways to automate data cleaning or scrubbing to speed up data analytics and gain accurate insights from big data. Artificial intelligence and machine learning will play a major role in data cleaning automation.

10. Increase in Use of Natural Language Processing

Famously known as NLP, it started as a subset of artificial intelligence. It is now considered a part of the business processes used to study data to find patterns and trends. It is said that NLP will be used for the immediate retrieval of information from data repositories in 2022. Natural Language Processing will have access to quality information that will result in quality insights.

Not just that, NLP also provides access to sentiment analysis. This way, you will have a clear picture of what your customers think and feel about your business and your competitors. When you know what your customers and target audience expect, it becomes easier to provide them with the required products/ services and enhance customer satisfaction.
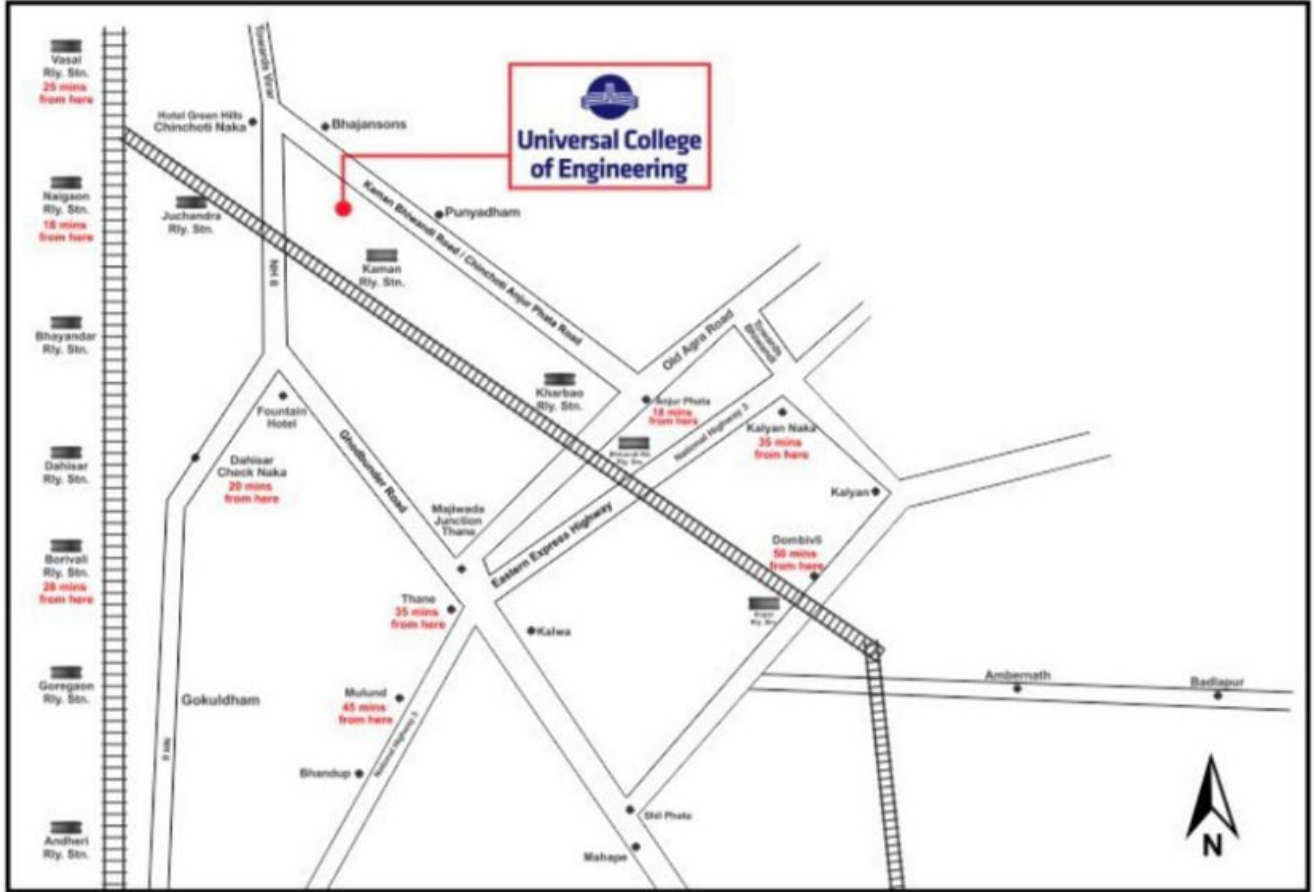
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