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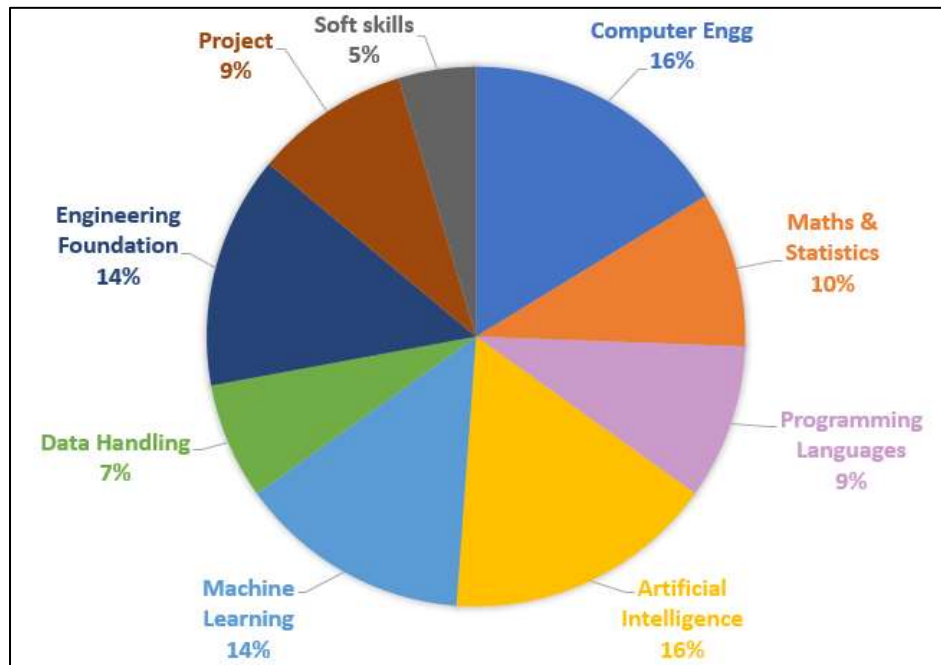
## Artificial Intelligence and Machine Learning

Coined in the year 1956 by John McCarthy's, the term "Artificial intelligence" (AI) has become exceedingly significant today due to increased data volumes, advanced algorithms, and improvements in computing power and storage. AI is a wide-ranging branch of computer science concerned with building smart machines capable of performing tasks that typically require human intelligence. It enables effective integration of information, analyze data and use the resulting insights to improve decision-making. Machine Learning, a subset of AI, is defined as "the field of study that gives computers the capability to learn without being explicitly programmed" by Arthur Samuel in the year 1959.

Artificial intelligence will transform the global economy and opportunities in AI are in high demand. As AI careers are future-proof, Dwarkadas J. Sanghvi College of Engineering is introducing four-year **B. Tech.** degree in "**Artificial Intelligence and Machine Learning**" from the academic year 2021-2022 with intake of 60 students. Owing to the vision of becoming world class institution for imparting education in engineering, institute ensures state of the art curriculum, experienced and competent faculty, modern amenities and cutting edge infrastructure and active industry – academia association.

### Syllabus overview

First Year	Common for all Branches. Basic Science and Engineering subjects with Programming languages using C (Structured Programming Language) and JAVA (Object Oriented Programming).
Second Year	Statistics, Data Structures and algorithms, Database Management Systems, Discrete Structures, Computer Network, Python Programming, Constitution of India, Mathematics for Intelligent Systems, Analysis of Algorithms, Data mining and Business Intelligence, AI and Expert system, Web Programming, Innovative Product Development, Universal human values.
Third Year	Bio-inspired AI, Machine Learning, Operating System, Image Processing, Deep Learning, High Performance and Cloud Computing, Natural Language Processing, Innovative Product Development, Big Data Infrastructure, SAS Programming, Business Communication and Ethics, <b>Electives:</b> Design Thinking, Computer architecture, Software Engineering, Smart Product Design, VR and AR, Cognitive Computing.
Final Year	Intelligent Security Systems, Computer Vision, ML Deployment and Operations, Reinforcement Learning, Advanced Optimization, Project, <b>Electives:</b> Intelligent Robots and Drone technology, Probabilistic Graphical Model, Social, Web and Mobile Analytics, Quantum Machine Learning, Recommender Systems, Game Design, AI in Healthcare and Life Sciences.



## Frequently Asked Questions

### 1. What is the importance of this branch of Engineering?

Tractica, a market intelligence firm in USA predicts the global AI software market will be worth \$126 billion by 2025. A 2019 Gartner survey indicates 37% of business enterprises already implemented AI in their workplaces. As per machine learning market research report by Market Research Future, the global machine learning market is projected to grow from \$7.3B in 2020 to \$30.6B in 2024. AI career is future proof and its applications are in all most every field including healthcare, education, transportation, retail, communications, agriculture, media, retail, advertising etc.

### 2. Prerequisites/ Interests required?

A student wishes to pursue career in Artificial Intelligence and Machine Learning shall have interest in Mathematics, Statistics and Programming.

### 3. What are the placement opportunities?

The opportunities include profile such as AI Engineer, AI Research Scientist, BI Developer, Product Manager, ML Engineer, Cloud Engineer, DevOps Engineer, Data Scientist, Data Analyst, Robotics Process Automation Engineer, Big Data Engineer, Python Programmer, Full Stack developer, Game designer, Software Engineer etc. The few of the related companies are Amdocs, Fractal Analytics, Directi, Quntiphi, Oracle financial services, J.P. Morgan, NSE, ZS, Infosys, TCS, Capgemini, media.net, BNP Paribas, Browser Stack, Deloitte, CitiusTech, Ernst & Young etc.



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**DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING**

(Autonomous College Affiliated to the University of Mumbai)

NAAC Accredited with "A" Grade (CGPA : 3.18)



4. What are higher study prospects?

In India, they may pursue M.Tech. in Computer Science/ Artificial Intelligence/ Data Science. The opportunities from foreign universities include M.S. in Computer Science/ Artificial Intelligence/ Data Science/ Financial Engineering/ Product Management. They may also pursue MBA from India or abroad.

5. How many subjects are common with Computer Engineering and Information Technology?

Approximately 50% subjects are common with Computer Engineering and Information Technology.

6. What is the difference with other related branches?

Building base of core computer engineering, the AI and ML based latest technology is covered in depth. The application of this technology in various AI related fields are developed up to the extent of deploying the technology for real time application and developing smart products.

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