Career aspirations in robotics !

What is **Robotics?**

ROBOTICS IS A FIELD OF ENGINEERING AND COMPUTER SCIENCE FOCUSED ON THE DESIGN, CONSTRUCTION, AND OPERATION OF ROBOTS. IT INVOLVES CREATING PROGRAMMABLE MACHINES THAT CAN PERFORM PHYSICAL TASKS, USING COMPONENTS LIKE SENSORS TO GATHER INFORMATION AND ACTUATORS TO MOVE. ROBOTS ARE USED IN MANY APPLICATIONS, SUCH AS MANUFACTURING, MEDICINE, SPACE EXPLORATION, AND HELPING WITH DANGEROUS OR REPETITIVE JOBS

Why ROBOTICS ?

advantage’s

- Robotics increases efficiency and productivity by automating repetitive tasks, allowing for faster operations and less human error.
- Robots enable improved safety by performing dangerous jobs that could harm humans, such as in hazardous manufacturing or medical procedures.

Disadvantage’s

- Robots enable improved safety by performing dangerous jobs that could harm humans, such as in hazardous manufacturing or medical procedures.
- Technical challenges such as downtime, glitches, or breakdowns can disrupt operations and require human intervention to resolve.

Career in robotics

Robotics Engineer

3

4

Robotics mechanical engineer

Robotics software engineer

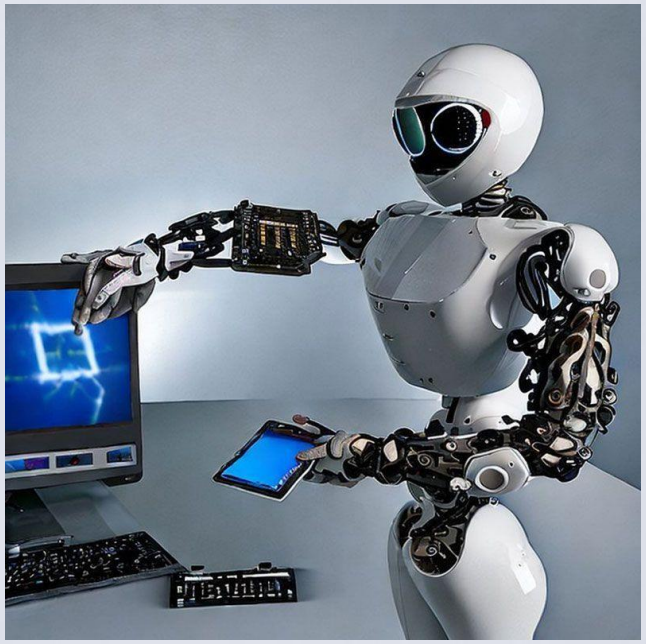
1

2

Robotics technician

Required skill*

- **Programming:** Proficiency in languages like C, C++, and Python.
- **Mathematics:** Strong foundation in algebra and calculus.
- **Engineering disciplines:** Knowledge of mechanical, electrical, and computer engineering principles.



Specialized knowledge

- **Computer Vision:** Image processing and machine learning.
- **Control Systems:** PID controllers.
- **CAD/CAE:** Software like Solidworks , CATIA, and Ansys.

Learning Path for Robotics careers

1. **Build a foundational education**

Bachelor's degree:

Earn a bachelor's degree in mechanical engineering, electrical engineering, computer science, or mechatronics. Many universities offer specialized programs or concentrations in robotics.

Strong fundamentals:

Take courses in mathematics (algebra, calculus, statistics) and physics (Newton's laws, motion, mechanics).

2. **Develop core technical skills :**

Programming:

Become proficient in programming languages crucial for robotics, such as Python and C++.

Engineering disciplines:

Focus on key areas like mechanical design, electrical systems, and control systems.

@Future initiatives

- *Future initiatives in the robotics industry are focused on advancing artificial intelligence (AI), enhancing human-robot collaboration, and expanding into new, complex fields like sustainable robotics and soft robotics. The integration of robotics with other technologies like the Internet of Things (IoT), 5G, and Digital Twin technology is central to these developments.*

THANK YOU !!!

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