Robotics and Autonomous Systems.   
What is it about?

What are the Key Concepts and how are they interconnected?

How is it applied to real world problems?

What are its limitations and ethical considerations.   
  
Project based Learning.

Lecture 1:

What is an intelligent robot?

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“A robot is a special type of agent; it is physically situated in the real world while a software agent is situated in a virtual world defined by the World Wide Web, simulation or confines of a software system. [3]

Physical Situatedness of a Robot: Refers to being present in the physical world, literally. Do not confuse with “awareness”   
Difference between Situatedness and awareness:   
While situatedness deals with the robot's placement and activities in an environment, awareness encompasses its cognitive capacity to observe, process information, and make decisions based on environmental stimuli. Essentially, situatedness is about being physically embedded, whereas awareness is about understanding and responding to the environment.

Components of Intelligent Robots:   
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Main Types of Robots

* **Ground Robots**: Operate on land, used for tasks like manufacturing, surveillance, and logistics.
* **Aerial Robots (Drones)**: Fly to perform tasks like aerial photography, surveying, and monitoring.
* **Water and Underwater Robots**: Navigate water surfaces or submerge to study marine environments, inspect underwater structures, or perform search and rescue.
* **Pipe Inspection Robots**: Traverse inside pipes for maintenance, inspection, and detecting leaks.
* **Legged Drones**: Combine aerial ability with landing capabilities on challenging terrains.
* **Biomimetic Robots**: Mimic animals, used for research, surveillance, or understanding biological systems.
* **Androids**: Human-like robots designed for interaction, service, or research into human-robot interfaces.

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Exploring how the 7 main areas in AI relate to robotics.   
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