Assignment 1

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Subject : AI

Q1] Define the concept of intelligent systems in the context of AI. Discuss the fundamentall characteristics that differentiate systems from traditional computing systems.

⇒ Intelligent systems are computer system which have intelligence similar to humans, these systems are designed to adapt, learn, make decision, solve complex problem and even improve themselve over time.

Following are some characteristic difference between traditional and intelligent systems.

① Adabtability and learning

Traditional : Follow predefined rules and instruction
Intelligent : Adapt and learn from data and experiance. They can modify their behaviour based on changing circumstances.

② Decision-Making

Traditional : Runs deterministic Algorithms with fixed paths.
Intelligent : Use probabilistic reasoning and learning Algorithms to make decision in unastain and new environment.

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③ Complex problem solving

Traditional : Can only solve structured problem.
Intelligent : Can also solve unstructured problems, by learning from other unstructured problems.

④ Self improvement

Traditional : Once the code is written, the logic remain unchanged and improve the program we have to manually update it.
Intelligent : It can learn from the previous experience and improve on its own.

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Q2] Elaborate the current trends in AI

⇒ Deep learning

→ It is a subset of Machine learning that uses neural networks with multiple layers to model complex pattern
→ It has achieved remarkable success in tasks such as image and speed recognition, natural language processing.

Natural language processing (NLP)

→ NLP involves the interaction between computers and human languages
→ NLP has changed the world on large scale the best examples of these include LLM like ChatGPT, Bard

Ethical Consideration in AI

→ As AI technologies advance, ethical concerns have become paramount, issue include subject like data privacy, social impact of AI.
→ Addressing ethical considerations is crucial to build responsible and trustworthy AI systems
→ Effort are being made in these direction by includy robust root-compands in AI systems

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Explainable AI (XAI):

→ XAI aims to enhance transparency and interpretability in AI systems, allowing humans to understand the decision-making process of complex model

→ As AI system become more sophisticated, understanding their decision logic becomes crucial, especidy in critical domains like healthcare, finance, autonomous vehicle.

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