7/1/22

Applications of AI

(1) AI in Social Media :- Recommendation system.
Fake news detection / Fake profile.
Content filtering
Hate speech detection.
Sentiment Analysis
Deep Fakes
Link prediction.
Memes analysis
Child safety.

(2) AI in Space : Simulations.
Mars Rover
Chandrayaan.

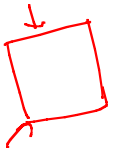
(3) AI in healthcare : Cancer cells detection.
COVID prediction
Drug Repositioning. → Computational Biology
Biosignal processing

(4) AI in Tourism

(5) AI in Food Industry.

(6) AI in Vision : Image Analysis
Augmented Reality / Virtual Reality. → Intel → Neuromorphic computing
Video Analysis → Video Surveillance
Car Parking detection.
Filters in Social media.

GFP-GAN



(7) AI in finance :- Stock Prediction
Credit fraud Detection.
Algo. trading
ATMs, Passbook printing, Cash deposits

(8) AI in Automobile :- Driverless car.
Teslabot

(9) AI in Robotics :- Sophia
Alexa.
Drone.

(10) AI in Entertainment: Live Autotune, Live captions.

(11) AI in Agriculture. :- Rain pattern
Crop Monitoring.

12) AI in Education :- TA Bots

Personal Virtual Tutors

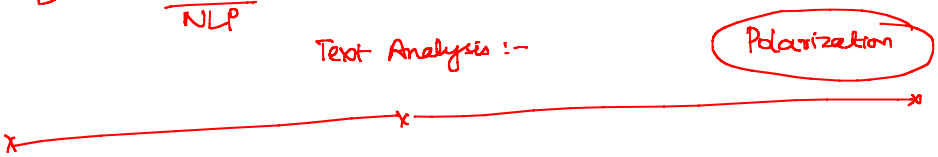
Automated Grading Systems.

AI-Proctored Exam System

Speech in Education.

13) AI in Text / NLP :- Text Summarization

Text Analysis :- Polarization



Agent

Examplee. :- ① Human Agents → Eye, Ears etc. (Sensors)
→ Hands, Legs (Actuators)
→ Agent program (Brain)

② Robotic Agents → Sensors :- Thermal, Solar, Camera, Infrared etc.
→ Actuators :- Motors, Wheels, Grippers, Light, Speakers etc.

e.g. Fire Alarm.

③ Softbots (Software Agents) → Sensors :- func" (reading)
→ Actuators :- func" (writing)

④ Expert Systems in Healthcare :- Cardiologist.

⑤ Autonomous Spacecraft :- Mars Rover.

⑥ Intelligent Buildings :- Lighting cond", Air conditioning, Doors, Fire sensors.

Basic functionalities of Agent :-

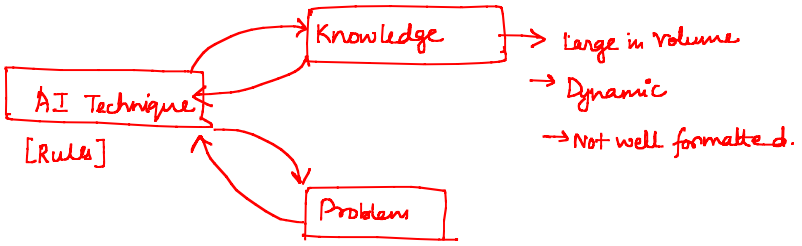
① Sensing :- (must sense the environment)

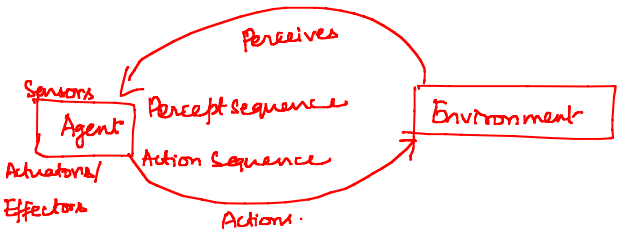
② Acting :- (must act on the environment).

③ Understand, Reason, Learn (Autonomous Agents).

Task = StudentBot Agent

PEAS	PAGE
→ Performance Measure	→ Percept
→ Environment	→ Action
→ Actuators	→ Goal
→ Sensors	→ Environment





Agent

↳ Agent maps the percept sequence into action sequence.

↳ operates in its environment.

↳ senses / perceives its environment through sensors.

↳ acts upon environment through actuators / effectors.

Percept

↳ complete set of input at a given time.

↳ current percept sequence can influence the actions of agent.

Action

↳ An operation involving an actuator is called action.

↳ Actions can be grouped into action sequence.

Agent Program

↳ Implements the mapping from percept sequence to action sequence.

How to evaluate the performance of an agent ?

↳ Behavior and performance of agent in terms of agent func^n.

Performance measure

↳ A subjective measure which characterizes how successful an agent is.

e.g. Speed, Power Usage, Accuracy etc.