ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

DAY – 20

Date: Jul 18, 2025

Applications of Artificial Intelligence (AI)

1. Healthcare

- AI systems help in diagnosing diseases like cancer using medical imaging.
- Virtual assistants provide reminders, schedule appointments, and answer patient queries.

2. Education

- AI-powered tutoring systems offer personalized learning paths for students.
- Virtual teaching assistants can answer questions and help with lesson delivery.

3. Finance

- AI models detect fraud by identifying unusual spending behavior or transaction patterns.
- Robo-advisors provide investment recommendations based on user profiles.

4. Retail

- AI is used to personalize product recommendations (e.g., Amazon, Flipkart).
- Virtual shopping assistants help customers navigate online stores.

5. Transportation

- Autonomous vehicles use AI for lane detection, obstacle avoidance, and navigation.
- Traffic management systems predict congestion and optimize signal timings.
- Ride-sharing platforms like Uber use AI for route and fare optimization.

6. Entertainment

- Streaming platforms like Netflix and Spotify use AI for content recommendations.
- AI creates intelligent game characters and realistic environments.

Applications of Machine Learning (ML)

1. Healthcare

- ML algorithms analyze large datasets to predict disease risks.
- ML aids in image recognition for detecting tumors or fractures in scans.
- Predictive models help hospitals plan resources and manage outbreaks.

2. Finance

- ML is used to predict stock prices and market trends.
- Credit scoring models evaluate a borrower's risk using historical data.
- Fraud detection models identify patterns in transaction behavior.

3. Marketing and E-commerce

- ML helps segment customers based on behavior and preferences.
- Predictive analytics recommend products or ads users are most likely to engage with.
- Churn prediction models identify users likely to stop using a service.

4. Agriculture

- ML algorithms help in predicting crop yield based on environmental conditions.
- Drones and ML-based cameras detect diseases or pests in plants.
- Soil and weather data are used to suggest best planting and harvesting times.

5. Cybersecurity

- ML detects anomalies in network traffic that may indicate a cyberattack.
- Email systems use ML to classify spam and phishing emails.
- Security systems use ML to detect and respond to evolving threats.