Bachelor of Engineering in Information Technology

ITM301 Professional Practices in IT

Unit I: Introduction (AI and Society)

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Overview

- AI

- AI Timeline

- Usecases

- GenAI

- Ethical Delimas in AI

What is AI?

- AI refers to systems or machines that mimic human intelligence to perform tasks.

- Includes learning, reasoning, problem-solving, perception, and language understanding.

- Examples: Chatbots, facial recognition, self-driving cars.

Why AI matters to Society?

- AI is integrated into everyday life and industries.

- It transforms how we work, communicate, and solve problems.

- Raises ethical, legal, and social questions.

Time of AI Development

- 1950s: Turing Test by Alan Turing.

- 1980s: Expert systems become popular.

- 2010s: Deep learning and big data revolution.

- 2020s: Generative AI and real-world deployment.

AI Use Cases Across Industries

- Healthcare: diagnostics, drug discovery, virtual assistants.

- Finance: fraud detection, algorithmic trading.

- Agriculture: crop monitoring, predictive analytics.

- Transportation: autonomous vehicles, route optimization.

Generative AI: Opportunities and Concerns

- Tools like ChatGPT, DALL·E, and Deepfakes.

- Opportunities: content creation, education, accessibility.

- Concerns: misinformation, job displacement, copyright.

Ethical Dilemmas in AI

- Bias and discrimination in algorithms.

- Lack of transparency and accountability.

- Surveillance and privacy issues.

Case Study: Bias in Facial Recognition

• Facial recognition systems show racial and gender bias.

• Real-world impacts: wrongful arrests, discrimination.

• Calls for regulation and better training data.

The Need for AI Regulations

- Unregulated AI can harm rights and democracy.

- Global efforts: EU AI Act, UNESCO AI Ethics.

- Need for enforceable and ethical frameworks.

Will AI Replace Human Jobs?

- Routine and repetitive tasks are at risk.

- New jobs will be created in AI development and oversight.

- Emphasis on reskilling and upskilling workforce.

The Changing Nature of Work

- Remote work, gig economy, AI collaboration.

- AI in recruitment, monitoring, and performance evaluation.

- Need for policies to protect workers' rights.

Professional Responsibilities in an AI-Driven World

- Engineers must prioritize ethics, fairness, and transparency.

- Understand potential social impacts of their work.

- Follow codes of conduct and legal guidelines.

AI and Politics

- AI used in election campaigns and political ads.

- Risks: microtargeting, misinformation, voter manipulation.

- Need for transparent AI in democratic processes.

Filter Bubbles and Fake News

- AI-driven recommendations create echo chambers.

- Fake news spreads faster through social media algorithms.

- Media literacy and algorithm transparency are key.

AI across Cultures

- Cultural norms shape AI development and use.

- Western-centric datasets may exclude other cultures.

- Inclusion of diverse perspectives is critical.

Building Responsible AI Systems

- Principles: fairness, transparency, accountability, privacy.

- Use diverse data and involve interdisciplinary teams.

- Test AI systems rigorously before deployment.

AI for Social Good

- AI for climate change, disaster response, education.

- NGOs and social enterprises use AI to solve global challenges.

- Encouraging students to develop impactful solutions.

Thank you