CS-34: Introduction to AI

Objectives:

- Develop a comprehensive understanding of the fundamental concepts and applications of Artificial Intelligence.
- Gain knowledge of the major techniques and technologies used in Machine Learning and their applications in various domains.
- Develop an understanding of Natural Language Processing and its applications in fields such as chatbots, sentiment analysis, and language translation.
- Explore the applications and techniques of Computer Vision in real-world scenarios and understand the ethical considerations related to its use.
- Stay up-to-date with emerging trends and advancements in AI, and understand their implications for society and the workforce

Prerequisites:

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Unit No.	Topic	Detail
1	Introduction to AI	• Definition of AI • Brief History of AI • Applications of AI • Ethical considerations in AI • Overview of AI Technologies and techniques
2	Computer Vision	• Introduction • Basic techniques of Computer Vision • Applications of Computer Vision • Computer Vision Libraries and Tools • Ethical Considerations in Computer Vision
3	Emerging Trends in AI	• Advanced AI technologies and techniques • AI and IOT • AI and Robotics • Future directions of AI research and development • Implications of AI for society and the workforce

ReferenceBooks:

- Bishop, C. M. (2006). Pattern recognition and machine learning. Springer.
- Goodfellow, I., Bengio, Y., & Courville, A. (2016). Deep learning. MIT press.
- Shane, M. (2018). Artificial intelligence and ethics. Morgan & Claypool Publishers.
- Russell, S. J., & Norvig, P. (2020). Artificial intelligence: A modern approach. Pearson.

Course Outcomes:

- Students will be able to define Artificial Intelligence, describe its history and applications,

and analyze ethical considerations related to AI.

- Students will be able to understand the basics of Machine Learning, including the different types of algorithms, data preparation, and processing. They will also be able to identify successful Machine Learning projects.
- Students will be able to identify the different techniques used in Computer Vision, understand the applications of Computer Vision, and identify the ethical on side rations related to Computer Vision.
- Students will be able to identify emerging trends in Artificial Intelligence, including advanced AI technologies and techniques, AI and IoT, AI and Robotics, and future directions of AI research and development. They will also be able to analyze the implications of AI for society and the workforce.