

PRASAD V. POTLURI SIDDHARTHA INSTITUTE OF TECHNOLOGY

(Autonomous)

Kanuru, Vijayawada-520007

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING (Data Science)

IV B Tech – I Semester (Data Science)

Ethical Artificial Intelligence

Course Code	20DS4702C	Year	IV	Semester	I
Course Category	PEC	Branch	CSE (Data Science)	Course Type	Theory
Credits	3	L-T-P	3-0-0	Prerequisites	Artificial Intelligence
Continuous Internal Evaluation	30	Semester End Evaluation	70	Total Marks	100

Course Outcomes

Upon Successful completion of course, the student will be able to

CO1	Describe ethical principles, privacy, fairness, and societal impacts of AI to understand its moral and legal implications.	L2
CO2	Apply ethical principles to assess trust, fairness, and privacy issues in AI systems using real-world case studies.	L3
CO3	Apply ethical frameworks and standards to evaluate AI regulations, initiatives, and societal impacts.	L3
CO4	Analyze privacy threats, regulations, and societal impacts to address ethical challenges in AI deployment.	L4

Contribution of course outcomes towards achievement of program outcomes & Strength of correlations (3: Substantial,2: Moderate,1: Slight)

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Syllabus		
Unit No	Contents	Map ped CO
I	Introduction to Ethics in AI: Strong and weak AI, Types of ethics---Descriptive, Normative, Meta. Relationship between ethics and law, Machine ethics examples, Moral Diversity and Testing, Need of ethics, Normative Ethical Theories, Ethics and Empirical Evidence, Four Domains of Ethics, Justification and Argument in Ethics, Moral Relativism. Morality and Ethics in AI, Impact of AI on Society, Impact on Human Psychology.	CO1
II	Trust and Fairness in AI systems: User acceptance and trust, functional elements of trust, ethical principles of trustworthy and fair AI, Responsibility, and liability in the case of AI systems. Privacy issues of AI: what is privacy, Cases of Privacy Violations Through AI, Case Studies: Use of Personal Data by Authoritarian Regimes, Genetic Privacy, Biometric Surveillance, Data Protection and Privacy, Responses to AI-Related Privacy Threats.	CO1, CO2
III	AI Standards and Regulation: Model Process for Addressing Ethical Concerns During System Design, Transparency of Autonomous Systems , Algorithmic Bias Considerations, Ontological Standards for Ethically Driven AI, Future challenges in creating ethical AI standards .	CO1, CO2
IV	Ethical Initiatives in AI: International Ethical Initiatives, Ethical Harms and Concerns. Ethical Implications of AI in Society: AI and Society, Ethical Decision Making in Industries, Ethical Issues in Medicine, Social Implications, AI and Autonomy, AI and inequality, The ethical challenges of AI in surveillance and public safety .	CO1, CO3 CO4
V	AI for good and the Sustainable Development Goals: cases of AI for good or not- Seasonal climate forecasting, Helicopter research, Ethical questions concerning AI for good and SDGs, The Data Desert or the Uneven Distribution of Data Availability, The Application of Double Standards, Ignoring the Social Determinants of the Problems the SDGs Try to Solve, The Elephant in the Room: The Digital Divide and the Shortage of AI Talent.	CO1, CO3, CO4

Learning Resources
Text Books
1.The Ethics of Artificial Intelligence: Issues and Initiatives, Y. Eleanor Bird, Jasmin Fox-Skelly, Nicola Jenner, Ruth Larbey, Emma Weitkamp, and Alan Winfield, March 2020, European Parliamentary Research Service (EPRS)
2.Ethics of Artificial Intelligence: Case Studies and Options for Addressing Ethical Challenges, Bernd Carsten Stahl, Doris Schroeder, and Rowena Rodrigues, 1st Edition, 2023, Springer Nature.
References

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| <ol style="list-style-type: none">1. Towards a Code of Ethics for Artificial Intelligence (Artificial Intelligence: Foundations, Theory, and Algorithms), Paula Boddington, 1st Edition, November 2017, Springer International Publishing.2. AI Ethics, Mark Coeckelbergh, 1st Edition, April 2020, The MIT Press (Essential Knowledge Series) |
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E-Recourses and other Digital Material

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| <ol style="list-style-type: none">1. https://www.scu.edu/ethics/all-about-ethics/artificial-intelligence-and-ethics-sixteenchallenges-and-opportunities/.2. https://www.weforum.org/agenda/2016/10/top-10-ethical-issues-in-artificial-intelligence/. |
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