

Data Ethics in a Digital Age: A Gamified and Immersive Approach

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Abstract:

With the rapid growth of data science and its increasing role in shaping our world, it's crucial to understand the ethical implications and human contexts of data use. Data ethics is an area that is constantly evolving, and traditional teaching methods may not effectively engage students in this digital world. Gamification learning can be a new way of teaching data ethics, as it creates an engaging and enjoyable learning experience that can help students to develop their critical thinking, problem-solving, and ethical decision-making skills. Building upon that, using Virtual Teaching and Learning (VTL) for data ethics course can further provide a unique and immersive learning experience. It allows students to explore different scenarios and make ethical decisions in a safe and controlled environment. It can also lead to better retention of knowledge and a deeper understanding of the subject matter, help to prepare students for future careers where VR is becoming increasingly prevalent. This proposal aims to develop of a gamified learning approach, augmented by virtual reality (VR) technology, to teach data ethics in a more engaging and immersive way.

The proposed project will create a gamified learning environment by incorporating a range of activities to foster engagement and promote critical thinking on ethical issues related to data science. The methods include escape room activities, role-playing exercises, case discussions, in-class debates, and interactive quizzes. The escape room activities will provide an engaging and challenging environment that promotes teamwork and problem-solving skills, as students work together to solve puzzles related to data ethics. The role-playing exercises will provide a more immersive approach, encouraging students to empathize with different stakeholders and gain a deeper understanding of the complexity of decision-making in ethical dilemmas related to data science. Through embodying various characters or stakeholders in realistic scenarios, students can develop empathy and a broader perspective, appreciating the diverse viewpoints that shape the real world. Case discussions and in-class debates will foster critical thinking and encourage students to analyze different perspectives on ethical issues related to data science. The interactive quizzes will allow students to review and test their knowledge on different aspects of data ethics. The VR can be incorporated into these above learning activities to help students immerse themselves in experiencing different scenarios. For example, VR can simulate ethical dilemmas that arise in the collection and use of personal data. Students can be immersed in a virtual environment where they are asked to make ethical decisions about the collection and use of personal data in various scenarios, such as targeted advertising, surveillance, and data breaches. The VR



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environment can provide students with a realistic experience that allows them to explore the ethical implications of different decisions.

The proposed project aligns with the University's strategic goals of promoting innovation in teaching and learning and preparing students for careers in a rapidly changing world. It will provide a dynamic and interactive learning experience that encourages critical thinking, problem-solving, and ethical decision-making in real-world scenarios, preparing students for the challenges and opportunities of the future.