IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 5, December 2025
Impact Factor: 7.67

CyberScape: A Gamified Simulation-Based Approach for Practical Cybersecurity Awareness and Education

Divya Ajay Ambre, Ayush Ashutosh Marale, Astha Vaibhav Narkhede
Mrs. Sonal Jogdand, Rajkumar Dilip Salunke
Department of Computer Engineering
Pimpri Chinchwad Polytecnic, Pune, India
divyaambre21@gmail.com, asthanarkhede@gmail.com, sonal.jogdand@gmail.com
salunkeraj68@gmail.com, ayush.marale@gmail.com

Abstract: *Due to the rapid development of digital technology, cyber-security threats like phishing, smishing, vishing, malware attacks, poor password practices, and social engineering attacks have become pervasive, especially among nontechnical individuals. Traditional cyber-security training, encompassing lectures, tutorial sessions, and awareness camps, typically fail to provide the requisite real-world experience required to effectively counter cyber-security threats. This presents a problem, causing ineffectual participation and lack of retention of key cyber-security concepts.This report presents CyberScape, an interactive cyber-security training platform developed using Unity, a popular computer game development platform, conceived to address these problems. CyberScape uses the Serious Gaming approach, simulating real-life cyber-attack scenarios in a virtual environment. Students embark on a complex virtual journey, with each level on the virtual journey focusing on a different cyber-security topic, such as identifying phishing attacks, protecting passwords, defending against USB malware attacks, Smishing, Vishing, and physical cybersecurity. Scenario-based, quiz, and decision-making tasks allow for effective experiential learning and encourage the adoption of appropriate cyber-security practices based on instant feedback.*

Keywords: Cybersecurity awareness, Gamification, Serious games, Experiential learning, Phishing and social engineering, Interactive simulation.

DOI: 10.48175/IJARSCT-30614