

International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 4, Issue 1, February 2024

Virtual Veda – Visualize Plants through Augmented Reality

Adarsh R Thimmapurmath¹, Shashank BG², Harshith S³, Sharmila Chidaravalli⁴

Undergraduate Students, Department of Information Science and Engineering^{1,2,3} Assistant Professor, Department of Information Science and Engineering⁴ Global Academy of Technology, Bangalore, India

Abstract: A unique initiative, Virtual Veda has been conceptualized and designed to add to knowledge besides kindling enthusiasm for the world of flora with Augmented Reality (AR) technology. For instance, an AR service provides a learning environment in which users could discover relationships between medicinal plants that are within a certain ecosystem, realize the significance of those medicinal plants, and become able to judge how to discriminate and maintain those medicinal plants through practical AR experience. Another diversity emphasis in the initiative is the use of audio explanations for inclusivity in the visually impaired. Virtual Veda is all about users being connected to nature in such a way that they are bound to nature more than they were ever and can be environmentally responsible.

Keywords: Augmented Reality, Biodiversity, Ecosystems, Education Inclusivity, Immersive Experience, Unity, Engine, Vuforia, Blender

REFERENCES

[1] Valladares Ríos L, Acosta-Diaz R, Santana-Mancilla PC. Enhancing self-learning in higher education with virtual and Augmented Reality Role Games: Students' perceptions. InVirtual Worlds 2023 Oct 30 (Vol. 2, No. 4, pp. 343-358). MDPI.

[2] Kumar N, Belhumeur PN, Biswas A, Jacobs DW, Kress WJ, Lopez IC, Soares JV. Leafsnap: A computer vision system for automatic plant species identification. In Computer Vision–ECCV 2012: 12th European Conference on Computer Vision, Florence, Italy, October 7-13, 2012, Proceedings, Part II 12 2012 (pp. 502-516). Springer Berlin Heidelberg.

[3] Ibrahim NZ, Osman R, Ali AM, Hamid NH, Nordin S, Shahimi S, Aminuddin MS, Razak FA. Integrating Augmented Reality in Learning Plants. InIOP Conference Series: Earth and Environmental Science 2022 Apr 1 (Vol. 1019, No. 1, p. 012051). IOP Publishing.

[4] Venkatesan M, Mohan H, Ryan JR, Schürch CM, Nolan GP, Frakes DH, Coskun AF. Virtual and augmented reality for biomedical applications. Cell reports medicine. 2021 Jul 20;2(7).

[5] Motejlek J, Alpay E. Taxonomy of virtual and augmented reality applications in education. IEEE transactions on learning technologies. 2021 Jun 1;14(3):415-29.

[6] Ponnusamy V, Natarajan S, Ramasamy N, Clement JC, Rajalingam P, Mitsunori M. An IoT-Enabled Augmented Reality Framework for Plant Disease Detection. Rev. d'IntelligenceArtif.. 2021 Jun 1;35(3):185-92.

[7] Julkarnain M, Zaen MT, Nawassyarif N, Pratama Y, Yuliadi Y. Augmented Reality-Based Medicine Plants Learning Applications. The IJICS (International Journal of Informatics and Computer Science). 2021 Aug 1;5(2):151-9..

[8] Permana R, Tosida ET, Suriansyah MI. DEVELOPMENT OF AUGMENTED REALITY PORTAL FOR MEDICININAL PLANTS INTRODUCTION. International Journal of Global Operations Research. 2022 May 5;3(2):52-63.

[9] Antoniadi G. Using an augmented reality application for teaching plant parts: A case study in 1st-grade primary school students. Advances in Mobile Learning Educational Research. 2023 Feb 1;3(1):630-7.

[10] Dijaya R, Maulidah NM, Abdullah D. Flashcard computer generated imagery medicinal plant for orthopedagogic education. InMATEC Web of Conferences 2018 (Vol. 197, p. 15005). EDP Sciences.

Copyright to IJARSCT www.ijarsct.co.in DOI: 10.48175/IJARSCT-15384



IJARSCT



International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 4, Issue 1, February 2024

[11] Ibrahim NZ, Osman R, Ali AM, Hamid NH, Nordin S, Shahimi S, Aminuddin MS, Razak FA. Integrating Augmented Reality in Learning Plants. InIOP Conference Series: Earth and Environmental Science 2022 Apr 1 (Vol. 1019, No. 1, p. 012051). IOP Publishing.

[12] Zhu Q, Xie Y, Ye F, Gao Z, Che B, Chen Z, Yu D. Chinese herb medicine in augmented reality. arXiv preprint arXiv:2309.13909. 2023 Sep 25.

[13] Julkarnain M, Zaen MT, Nawassyarif N, Pratama Y, Yuliadi Y. Augmented Reality-Based Medicine Plants Learning Applications. The IJICS (International Journal of Informatics and Computer Science). 2021 Aug 1;5(2):151-9.
[14] Zhao G, Zhang Q, Chu J, Li Y, Liu S, Lin L. Augmented reality application for plant learning. In2018 IEEE 9th International Conference on Software Engineering and Service Science (ICSESS) 2018 Nov 23 (pp. 1108-1111). IEEE.

[15] Midak LY, Kravets IV, Kuzyshyn OV, Baziuk LV, Buzhdyhan KV, Pahomov JD. Augmented reality as a part of STEM lessons. InJournal of physics: Conference series 2021 Jun 1 (Vol. 1946, No. 1, p. 012009). IOP Publishing.

[16] Choi S, Park JS. Development of augmented reality system for productivity enhancement in offshore plant construction. Journal of Marine Science and Engineering. 2021 Feb 17;9(2):209.

[17] Harrington MC, Bledsoe Z, Jones C, Miller J, Pring T. Designing a virtual arboretum as an immersive, multimodal, interactive, data visualization virtual field trip. Multimodal Technologies and Interaction. 2021 Apr 9;5(4):18.

[18] Permana R, Tosida ET, Suriansyah MI. DEVELOPMENT OF AUGMENTED REALITY PORTAL FOR MEDICININAL PLANTS INTRODUCTION. International Journal of Global Operations Research. 2022 May 5;3(2):52-63.

[19] Likhitkar S, Gereja J, Sonwane N, Pawar S. Plant Visualization Using Iot and Ar. Int J Eng Appl Sci Technol. 2020;4:235-9.

[20] Ibrahim NZ, Osman R, Ali AM, Hamid NH, Nordin S, Shahimi S, Aminuddin MS, Razak FA. Integrating Augmented Reality in Learning Plants. InIOP Conference Series: Earth and Environmental Science 2022 Apr 1 (Vol. 1019, No. 1, p. 012051). IOP Publishing.

