IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.67
Volume 5, Issue 4, March 2025

Braille Bridge using Machine Learning 4.0

Ms. Shreya Naigaonkar[1], Sakshi Pote[2], Shravani Lad[3], Kalyani Pawar[4], Mrs. P. S. Gaidhani[5]
Student, Guru Gobind Singh Polytechnic Nashik, Maharashtra, India[1234]
Lecturer, Guru Gobind Singh Polytechnic Nashik, Maharashtra, India[5]

Abstract: *In the rapidly advancing digital era, access to information is a universal right that should cater to all individuals, including those with visual impairments. Unfortunately, many people in this community face difficulties accessing digital content, especially when it involves Braille or non-textual elements. This project seeks to tackle this issue by building an innovative web-based platform that facilitates accessibility for visually impaired users.*

The primary focus of this project is to develop a system that can extract Braille from images, convert it into readable text, and further transform it into audible speech using advanced text-to-speech technology. Moreover, the platform incorporates multilingual text translation, allowing for seamless communication across different languages and cultures.

By utilizing modern machine learning techniques, the system ensures exceptional accuracy and efficiency in recognizing Braille and processing content. The platform's user-centric design makes it intuitive and easy to use, offering a practical solution to bridge the gap in digital accessibility. This scalable project has the potential to expand into mobile applications, include additional language support, and improve user interaction, making it a step forward in empowering visually impaired individuals to participate in the digital landscape.

Keywords: Digital Accessibility, Visual Impairments, Braille Recognition, Text-to-Speech, Multilingual Translation, Machine Learning, Image-to-Text, Inclusive Design, Scalable Technology, High Accuracy, User-Friendly Tools

DOI: 10.48175/IJARSCT-24061
ISSN 2581-9429 IJARSCT