Teach Me Braille: A Kit Consisting of Modules and Applications That Can Provide Fully Efficient Education for Visually Impaired Students and Support the Problems Faced by Individuals in Their Daily Life With the Help of Machine Learning Approaches

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Disabled people experience difficulties in many areas of daily life. The main reason for these difficulties is the great gap in the research about the solutions to the daily life problems of visually impaired individuals of all ages, their education life, and their literacy skills. Visually impaired individuals are trying to learn the Braille alphabet using primitive writing tablets and writing gibs. It is necessary to apply a form of education that will improve the other senses of students. The kit we have developed consists of modules that students do their studies and mobile applications that work integrated with our modules, and it fills this gap in research. This project aims to improve the other senses of visually impaired students, enable them to work with materials specifically designed for them, and give them the skills to read letters, words, sentences, and books. Additionally, we make their lives easier by producing solutions to their problems such as reading the texts they encounter in daily life or finding the objects they are looking for with the help of audio feedback and our image processing systems. With the data we collect, the module develops itself and becomes personalized according to each student. It regulates the frequency of the letters and the education order by checking the correct and incorrect rates based on letters and the similarities or differences of the incorrectly made letters' point variables. As a result, the developments in students' perception skills, other sense organs, and success became concrete.

Awards Won:
Third Award of $1,000