



A Mobile Assistive Application of Philippine Currency Recognition for The Visually Impaired Using Convolutional Neural Network

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ABSTRACT

The study describes a mobile assistive application that uses a convolutional neural network to aid visually impaired users in distinguishing Philippine currency denominations. The program employs picture recognition and machine learning technologies to ensure sensitivity to the demands of each user. The mixed-approaches design incorporates qualitative and quantitative research methods, yielding an intuitive, robust currency identification model with speech announcements and haptic feedback.

INTRODUCTION

This thesis proposes a mobile application for the visually impaired in the Philippines, providing image recognition of Philippine cash. The application aims to bridge accessibility gaps and improve the quality of life for visually challenged individuals, demonstrating the importance of technology in societal inclusion.

PROBLEM

Visually impaired individuals in the Philippines face difficulty in identifying different denominations of currency. This poses challenges, as it can lead to errors during financial transactions and increase the risk of theft or fraud. As a result, visually impaired individuals often rely on others to identify their currency, hindering their independence and autonomy.

OBJECTIVES

The general objective of this study is to develop a mobile assistive application of Philippine money recognition for the visually impaired individuals using Convolutional Neural Network. Furthermore, this system will recognize and identify various denominations of Philippine banknotes, including the freshly issued banknotes.

SIGNIFICANCE

The application enables the visually impaired individuals to handle their own financial transactions, promote financial inclusion, improve quality of life, provide a cost-effective solution, and contribute to the research and development of assistive technologies

METHODOLOGY

This study uses a mixed-approaches approach, combining qualitative and quantitative research methods. It involves visually impaired individuals using mobile devices and Philippine banknotes. Data is collected through surveys and usability testing. Ethical considerations include informed consent, confidentiality, and anonymity. The mobile assistive application is developed following user-centered design principles. An experimental study design evaluates the efficiency of the application, with participants trained on using the app and those given traditional currency recognition training. The study aims to understand the needs and preferences of visually impaired individuals.

RESULT AND DISCUSSION

