Indian Currency Recognition for Visually Impaired People

Zeroth-Level Project Presentation

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Introduction

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This project is designed to assist visually impaired individuals in recognizing and managing Indian currency notes independently. It offers an easy-to-use system with **voice-guided support** and **audio feedback**, allowing users to identify notes and keep track of their total amount without visual assistance.

Problem Statement

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Visually impaired individuals face significant challenges in identifying and managing physical currency, often relying on others for assistance, which compromises their financial independence and privacy.

Need: An accessible, user-friendly solution enabling independent recognition and handling of Indian currency notes through non-visual methods.

Project Objective

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- Provide a reliable currency recognition service
- Enable real-time auditory feedback
- Maintain a digital virtual purse
- Offer an accessible, keyboard- and voice-driven interface
- Enhance financial independence and security

Goal: To develop an accessible system that empowers users to recognize and manage currency independently and securely.

Existing System Limitations

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Current System Issues:

- Relies on faded tactile marks
- Depends on subtle differences in size and texture
- Limits user independence and privacy

Proposed System

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- Deep learning model based on ResNet architecture
- Currency recognition via webcam or image upload
- Voice command integration using Web Speech API
- Keyboard-driven interface requiring no mouse
- Continuous audio feedback for seamless interaction
- Virtual purse to track total currency amount

Tech Stack:

TensorFlow, ResNet, HTML, CSS, JavaScript, Web Speech API, Flask

System Configuration

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Hardware Configuration

- **Operating System:** Windows
- **Processor:** AMD Ryzen 5 5600H
- **Memory:** 8GB RAM

Software Configuration

- **Language:** Python
- **Machine Learning Library:** TensorFlow
- **Model Architecture:** ResNet (CNN)
- **Front End:** HTML, CSS3, JavaScript, Web Speech API
- **Back End:** Python Flask

Thank You!