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PROJECT ON

# VISIONMATE+
# AI-Powered Solution for Visually Impaired Users

# About me

I am currently an intern at Innomatics Research Labs, working on AI-powered solutions for accessibility. Under the guidance of Kanav Bansal, I have focused on developing user-centric technologies to assist visually impaired individuals. Previously, I have worked on AI/ML projects, with expertise in AI, Data Science, and NLP.

Github: https://github.com/jaakeerhn/Vision_Mate.git
LinkedIn: https://www.linkedin.com/posts/jaakeershaik_ai-accessibility-internshipexperience-activity-7269763251503038466-HvuZ?utm_source=share&utm_medium=member_desktop

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# Problem Statement

- Visually impaired individuals struggle to perceive and interact with their surroundings. Challenges include:
- Understanding their environment.
- Reading visual content.
- Performing sight-dependent tasks.

# Project Overview

- VisionMate+ is an AI-powered application designed to:
- Provide real-time scene understanding.
- Offer text-to-speech conversion.
- Extract text from images.
- The project combines cutting-edge technologies to empower visually impaired users.

# Project Key Features

- 📸 Describe Scene: Provides detailed image descriptions.
- 📝 Extract Text: Extracts text using OCR.
- 🔊 Text-to-Speech: Converts text to audio output.
- 🔍 Object Detection: Identifies objects for safe navigation.
- 💬 Personalized Assistance: Offers context-specific information.

# Technology Stack

- Technologies used:
- Google Generative AI: Scene descriptions.
- Tesseract OCR: Text extraction.
- gTTS: Text-to-speech conversion.
- Streamlit: Interactive user interface.

# Implementation

- Users upload an image (JPG, JPEG, PNG).
- AI processes the image to:
- Extract features (scene description, text, objects).
- Generate outputs like descriptions, audio, and highlighted text.
- Outputs are displayed in a user-friendly interface.

# Outputs & Demonstration

- Achieved Results:
- Accurate scene descriptions for uploaded images.
- Seamless text-to-speech conversion for accessibility.
- Clear text extraction and processing.

# Why It Matters

- Impact of VisionMate+:
- Empowers visually impaired individuals.
- Simplifies daily activities like reading and navigation.
- Promotes inclusivity through AI-driven technology.

# Future Enhancements

- Planned Improvements:
- Add multilingual support for text-to-speech.
- Integrate real-time camera feed for live assistance.
- Expand to wearable devices for portability.

# Conclusion

- VisionMate+ is a step towards building a more inclusive world, leveraging AI-driven technologies to empower visually impaired individuals. With ongoing enhancements, it aims to provide even greater accessibility and ease of use in the future.

# THANK YOU

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