# Smart Sight - Voice-Controlled Navigation App

## Developer: Isha Bachhav

### Project Overview

Smart Sight is an innovative voice-controlled navigation application designed to assist visually impaired users. The application provides an accessible interface that combines voice commands, object recognition, and AI-powered assistance.

### Key Features

1. Voice Control

- Hands-free operation through voice commands

- Natural language processing for command interpretation

- Real-time voice feedback

2. Object Recognition

- Camera-based object identification

- Scene description

- Text reading from images

3. Navigation Assistance

- Voice-guided navigation

- Obstacle detection

- Environment description

4. Accessibility Features

- High contrast interface

- Screen reader compatibility

- Emergency mode

- Dark mode support

### Technical Architecture

1. Backend (Python/Flask)

- Flask web framework

- SQLAlchemy database

- OpenAI integration

- Speech recognition services

2. Frontend

- Vanilla JavaScript

- Responsive HTML/CSS

- Web Speech API

- Camera integration

3. AI Services

- Image analysis

- Object recognition

- Text-to-speech

- Natural language processing

### APIs and Integrations

- OpenAI API for image analysis

- Google Speech Recognition

- Text-to-Speech services

- Web search integration

### Database Structure

- ChatbotResponse: Stores predefined responses

- UserQuery: Logs user interactions

- KnowledgeBase: Maintains learned information

### Security Features

- CORS protection

- Session management

- Secure API handling

- Environment variable protection

### Deployment

- Hosted on Replit

- Accessible via web interface

- Real-time updates

- Health monitoring

### Future Enhancements

1. Enhanced object recognition

2. Improved navigation accuracy

3. Offline mode support

4. Multi-language support

5. Advanced emergency features

### Contact

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Project: Smart Sight - Eyes that Listen, Hands that Guide