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Indian Society for Technical Education

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TECHNICA 2024

BLIND SIGHT

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Stream: Btech Computer Science

Year of graduation: 2025

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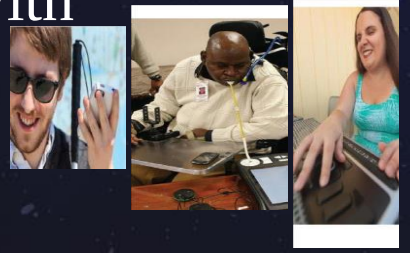
College: COER University

Stream:Btech Computer Science

Year of graduation: 2025

Track : Open Innovation

Problem Statement : In a tech-driven era, the blind and visually challenged still encounter barriers in accessing visual information and ensuring personal sense of security. Our innovation, BlindSight addresses the need for real-time, versatile support, revolutionizing accessibility and empowering the visually impaired with confidence and independence.



Proposed Solution

Imagine a revolutionary software implemented through an app, set to redefine accessibility for the visually impaired.

With features like real-time textual recognition, advanced face detection that even predicts age and mood of the person, custom face training, and currency detection, all in a consolidated platform; BlindSight anticipates transforming the user experience.

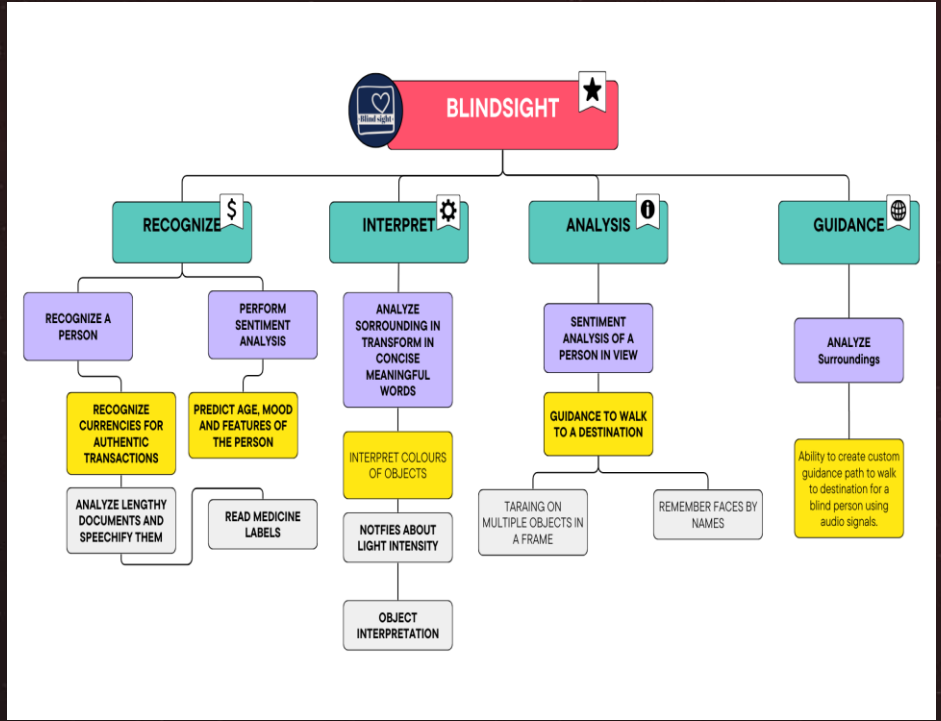
As we progress, our vision includes introducing a real-world guidance system, color and light intensity detection, multilingual support, and a diverse range of AI voices. blindSight aims to empower the visually impaired with unparalleled independence, making a lasting impact on their daily lives.

Tech Stack

1. **Textual Recognition:**
    i. **Technology:** Optical Character Recognition (OCR)
    ii. **Libraries/Frameworks:** Tesseract, Google Cloud Vision API
2. **Face Detection with Mood and Age Prediction:**
    i. **Technology:** Computer Vision
    ii. **Libraries/Frameworks:** OpenCV, Dlib
3. **Custom Face Training:**
    i. **Technology:** Machine Learning
    ii. **Frameworks:** TensorFlow, PyTorch
4. **Currency Detection:**
    i. **Technology:** Image Processing, Pattern Recognition
    ii. **Libraries/Frameworks:** OpenCV, Scikit-learn
6. **Real-World Guidance:**
    i. **Technology:** Location-based Services, Augmented Reality
    ii. **Frameworks:** Google Maps API, ARKit (for iOS), ARCore(for Android)
7. **Color and Light Intensity Detection:**
    1. **Technology:** Computer Vision
    2. **Libraries/Frameworks:** OpenCV
8. **Multilingual Support:**
    1. **Technology:** Natural Language Processing (NLP)
    2. **Libraries/Frameworks:** SpaCy, NLTK
9. **AI Voices:**
    1. **Technology:** Text-to-Speech (TTS)
    2. **Libraries/Frameworks:** Google Text-to-Speech API, Amazon Polly

Future Prospect

- Develop a high accuracy app.
- Establishment of our Volunteer program to incubate the training of visually impaired and familiarize them with Blindsight.
- Integration with existing smart glasses or AI pins for highly portable version of Blindsight(We aim to replace the Normal complete Black Glasses with smart BlindSight loaded Black Smart glasses).
- Global Partnerships and Scalability
- User-Centric Customization and Personalization: Install Blindsight within the household cctv camera, nannycams, doorbell cams etc.



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