# GuideSense

**Your Trusted Navigation Companion**

Team: Power Angers

Sprint 0

# Agenda

| | | |
|---|---|---|
| 1 | Team Member | Team Member Name<br>Role & Responsibilities |
| 2 | Project Overview | Project Statement<br>Project Description<br>Personas |
| 3 | Technologies & Tools | Platforms<br>Algorithms |
| 4 | Team Logistics | Project Schedule<br>Team Working Agreement |
| 5 | Retrospective | Feedbacks<br>Improvements |

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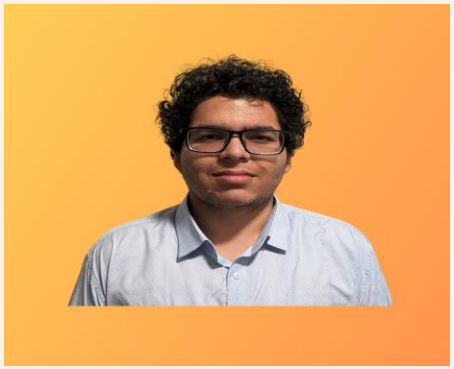


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# Problem Statement

- Navigating through everyday environments presents significant challenges for blind and visually impaired individuals., moving vehicles, and the lack of real-time guidance.
- Traditional mobility aids like canes and guide dogs, while helpful, often fall short in providing comprehensive and real-time information about obstacles, directions, and surroundings.
- This lack of real-time situational awareness can lead to increased risks of accidents and restrict the independence of visually impaired individuals.
- Therefore, there is a pressing need for an innovative solution that leverages modern technology to enhance mobility and safety for the visually impaired community.
- This project aims to create a web app that uses object detection and voice commands to help blind people navigate safely by warning them about obstacles, giving directions, and describing their surroundings in real time.

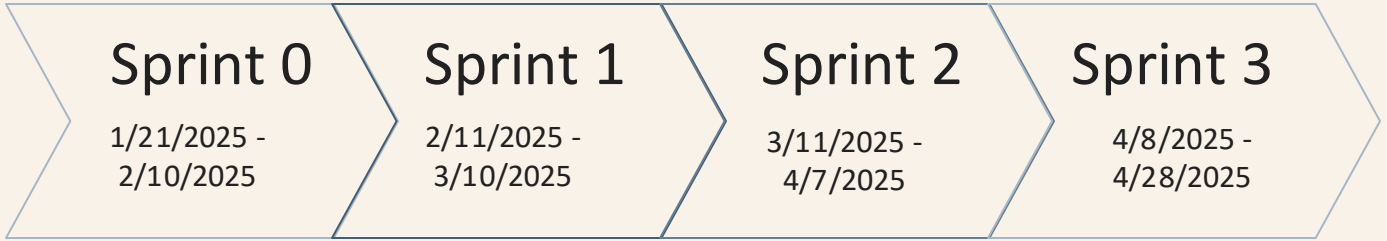
# Project Description

- This innovative web app leverages computer vision and machine learning to provide real-time audio guidance, identifying objects, obstacles, and crosswalks for the blind and visually impaired.
- Combining GPS and AI object detection, it aims to make it easier and safer for blind people to get around independently, especially in cities and outdoor areas.
- The goal is to provide a helpful, accessible, and dependable way for visually impaired people to navigate.

Key features of the application include:

- Real-time Object Detection
- Voice Navigation and Alerts
- GPS Integration
- User-Friendly Interface

# Project Schedule

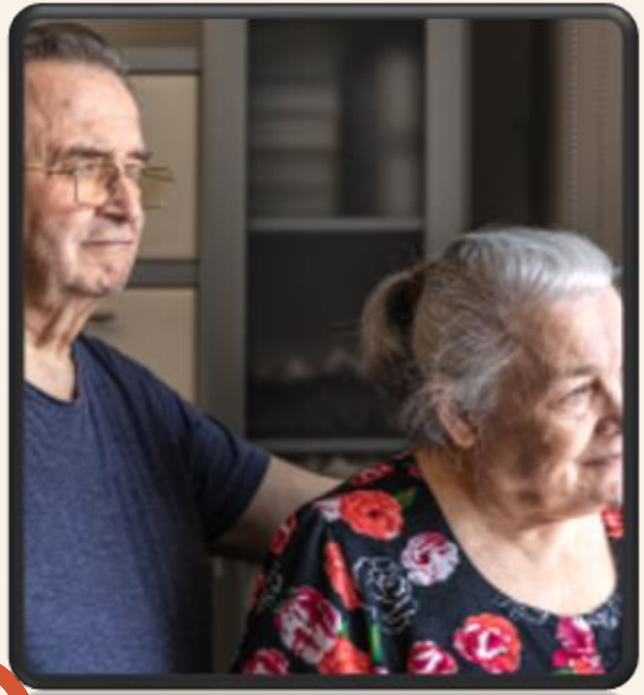



| Sprint 0 | Sprint 1 | Sprint 2 | Sprint 3 |
|---|---|---|---|
| Daily Scrum<br>Retrospective | Daily Scrum<br>Scrum Planning<br>Retrospective | Daily Scrum<br>Scrum Planning<br>Retrospective | Daily Scrum<br>Scrum Planning<br>Retrospective |

# Persona One: The Independent Blind User

- **Name:** Aisha Khan
- **Age:** 32
- **Occupation:** Software Developer (works remotely)
- **Background:** Aisha has been blind since birth. She is highly tech-savvy and relies on assistive technology. She is motivated to use tools that enhance her independence and streamline daily activities.
- **App Usage Scenario:** Aisha wants to use the app for navigation while walking, especially in unfamiliar areas, and identify objects which could be a barrier for seamless tasks.
- **Needs:** Seamless integration with existing assistive technologies (screen readers, voice control), accurate location services, reliable information about accessible routes and environments, and robust privacy features.
- **Goals:** Increased independence, improved access to information, enhanced safety while navigating, and streamlined daily task management.

# Persona Two: The Concerned Family Member



- **Name:** Robert Chen
- **Age:** 65
- **Relationship:** Son of a visually impaired senior
  "I worry about my mother's safety. I hope this app can help me stay connected and ensure she's doing okay."
- **Background:** Robert's mother is losing her vision due to macular degeneration. He lives in a different city and wants to stay connected and provide support remotely.
- **App Usage Scenario:** Robert wants to use the app to track his mother's location (with her consent), receive alerts if she deviates from her usual routes, remotely assist her with tasks like medication reminders, and communicate with her easily through the app's accessible interface.
- **Needs:** User-friendly interface, reliable location tracking (with privacy safeguards), remote assistance features, accessible communication tools, and clear instructions for setup and use.
- **Goals:** Increased peace of mind, improved communication with his mother, ability to provide remote support, and enhanced safety for his visually impaired parent

# Persona Three : Partially sighted Teenager

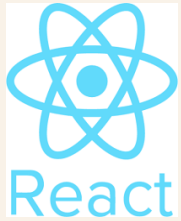
- **Name:** David Miller
- **Age:** 16
- **Background:** David has low vision due to a genetic condition. He can see some things with the aid of glasses or magnifiers.

"I want to be able to do the same things my friends do. I hope this app can help me navigate more easily and access information."

- **App Usage Scenario:** David wants to use the app to magnify text and images, identify colors, navigate public transportation, and access audio descriptions of videos and other media. He needs an app that is easily customizable to his specific visual needs.
- **Needs:** Customizable display settings (font size, contrast, color schemes), reliable object and text recognition features, seamless integration with magnification tools, and accessible interface that can be used with limited vision.
- **Goals:** Increased independence, improved access to information, enhanced social participation, and greater confidence in navigating the world.

# Technologies & Tools

## Programming Language


## Database



## Tools




# AI Model

**YOLO**, which stands for ‘You Only Look Once,’ is a state-of-the-art object detection model known for its real-time speed and accuracy.

- Real-time Speed: Processes the entire image in a single pass, making it one of the fastest models for object detection.
- Grid-Based Detection: Divides the image into a grid, with each cell responsible for detecting objects within it.
- Accurate Bounding Boxes: Predicts precise bounding boxes and confidence scores for each detected object.
- Pre-trained on COCO: Leverages the massive COCO dataset (80 object categories, 200,000+ images) for robust and accurate general object detection
- Refined Results: Uses Non-Maximum Suppression (NMS) to eliminate overlapping detections and ensure only the most accurate results are shown.

# Team Working Agreement

CS-691 SPRING 2025
TEAM WORKING AGREEMENT
TEAM-POWER ANGERS

**Communication**

- Team will Communicate with each other through Email and WhatsApp
- There is going to be a team meeting where all 8 members are required to join on every Tuesday after 9pm.
- Technical Team meeting where developers would join the call for brief about the tasks and the updates it will be on tuesday and thursday at 9pm
- Team members are expected to update beforehand if the they are going to be absent for the meeting and asked to be updated till the next meeting
- Each team member should complete the given task before the deadline.In some one case was not able to do so then they should inform it to the rest of the team so they could divide the task

**Work Division and Participation**

- The entire project work should be divided into equal parts and equal responsibility should be given to all team members.Mebers are expected to select and contribute to the task in which their skill are best fit.
- Jira, Github will be used to track and divide all our work
- Every team member should update about their task 2 times in a week.

- Each team member should complete their part of work before the deadline.If one fails to do so immediately report to the rest of the teammates and take assistance.
- In case a team member is absent in the team meeting,members must support the decision taken in the meeting.

# Team Working Agreement

**Respect**

- It is essential that all team members have a chance to share their opinion and make any suggestion without judgement.The team project is team effort,taking advantage of collective knowledge to come up with solutions.
- All members agree to respect each other's personal schedules and listen to each other's perspective.

| TEAM MEMBERS | EMAIL |
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# Retrospective

| What went well? | What need to improve | Action Items |
| --- | --- | --- |
| Everyone was active on Whatsapp | Calls frequency and participation | Schedule a zoom call and add it in our calender |
| Everyone collaborated in coming up with project ideas | Need to document what everyone is doing | Setup Jira for Project management. |
| Respected each other's opinions | Everyone needs to speak during the meeting. | Start early for sprint 1 |
| Team coordination was good | | |

# Project Wikipage Link

https://github.com/htmw/2025S-Power-Anger/wiki