Research Web Portal Project

Sprint Goals and Sprint Backlog

Version 1.1

Team Members:

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Revision History

Date	Version	Description	Name(s)
10/31/25	0.1	Initial draft	Hayden
11/31/25	1.0	Finalized sprint goals & backlog	Rishigesh R

Goals (All Sprints)

Sprint 1 – Project Launch & Setup

- Establish GitHub repository and assign roles.
- Collect datasets, conduct literature review, and submit project proposal.
- Prepare and submit preliminary report.

Sprint 2 – Frontend Setup

- Design and implement Android UI in Figma and Android Studio.
- Integrate CameraX feed and define frame-data handling structure.
- Connect frontend to backend through JNI bridge placeholders.

Sprint 3 – Backend & Model Training

- Implement YOLO model layers and training pipeline.
- Perform dataset preprocessing, augmentation, and OpenCV-based enhancements.
- Develop loss function, training loop, and parameter configuration file.

Sprint 4 – Output & Testing

- Integrate frontend and backend with live inference display.
- Implement Text-to-Speech feedback and performance optimization.
- Conduct final testing, device compatibility checks, and documentation.

Sprint Backlog

Backlog Item	Story Points	Assignee	Backlog Item	Story Points
Project Proposal	2	Rishigesh	1	Done
GitHub Setup	1	Aidan	1	Done
Dataset Research	3	Shreya	1	Done
Literature Review	2	Rishigesh, Shreya	1	Done
Preliminary Report	2	Hayden	1	Done
Frontend Layout (Figma/UI)	3	Jacob, Shreya	2	Done
Camera Integration	3	Shreya	2	In Progress
UI–Backend Data Handling	3	Jacob	2	Not Started
CPU/GPU Tensor Operations	5	Aidan	3	Done
Logger Class	2	Rishigesh	3	Done
OpenCV Preprocessing	3	Rishigesh, Aidan	3	Not Started
Dataset Preparation	4	Shreya, Aidan	3	Not Started
Implement YOLO Model Layout	5	Aidan	3	Not Started
Loss Function & Gradients	4	Rishigesh	3	Not Started
Data Loading & Augmentation	3	Aidan, Shreya	3	Not Started
Training Loop	4	Aidan, Rishigesh	3	Not Started

Parameter Management	3	Rishigesh	3	Not Started
JNI Integration	3	Rishigesh, Aidan	4	Not Started
Display Results	2	Jacob, Shreya	4	Not Started
Text-to-Speech Feedback	2	Jacob	4	Not Started
Unit & Integration Testing	3	Hayden, Shreya	4	Not Started
Performance Tuning	3	Aidan	4	Not Started
Device Compatibility	2	Hayden	4	Not Started
Presentation & Documentation	2	Hayden, Rishigesh	4	In Progress

References & Tools

- Figma: https://www.figma.com/design/x4CEVu8HwDE3LCoV95ukxr/Traffic-Sign-AI-App?node-id=0-1
- GitHub: https://github.com/ultralytics/ultralytics/tree/main
- Notion Workspace: Traffic Signs – Team 7 (PFW Capstone)
- Google Drive: https://drive.google.com/drive/folders/1zjWfq15qmkYWTTMi_cZXu-TtdRuL8jtq?usp=sharing