

Sprint3 Plan

Sprint 3: Enhancing Functionality

Duration: 4 weeks 

Sprint goal

The goal of Sprint 3 is to develop and refine additional features of the FarmBot system, including plant health monitoring, automated irrigation systems, environmental monitoring and a data sharing platform.

Functional decomposition

1. Enable viewing and downloading of historical thermal imaging data (US-U3)
Task decomposition:
Develop historical data access capabilities.
Implement historical data download function.
Priority: P1
Story Points: 2 SP
2. Download Images with RGB Values or Light Intensity Matrices (US-U2)
Task decomposition:
Develop functionality to extract RGB values or light intensity from images.
Implement download option for images along with their corresponding data matrices.
Update user interface to allow users to select this download option.
Priority: P1
Story Points: 2 SP
3. Integrated AI to automatically adjust camera settings (US-D10)
Task decomposition:
Research artificial intelligence technology suitable for environmental analysis.
Implement artificial intelligence models to automatically adjust camera settings.
Test and verify adjustments under various environmental conditions.
Priority: P2
Story Points: 3 SP
4. Develop AI-driven thermal signature recognition and health anomaly detection algorithms (US-U2)
Task decomposition:
Design and train artificial intelligence models for identifying thermal patterns.
Integrated anomaly detection capabilities.
Conduct field testing and iterate based on feedback.
Priority: P3
Story Points: 4 SP
5. Database designed for secure thermal imaging data storage and management (US-D8)
Task decomposition:
Design database schema.
Implement safety measures.
Test database integrity and security.
Priority: P3
Story Points: 3 SP

Team assignment

Each task is assigned to the most appropriate member based on the team member's technical abilities and professional experience. Can improve work efficiency and work quality.

Risk assessment and mitigation strategies

- New technologies require learning:

Description: Project teams need to master new technologies or tools to meet development needs, which can lead to steep learning curves and project delays.

Likelihood: High

Impact: Moderate

Mitigation strategy: Create a study schedule that allocates specific time each week for technical learning. Team members can divide their work to learn different technologies and share the knowledge they have learned in team meetings

- Data security issues:

Description: There may be data security issues and data privacy issues

Likelihood: Moderate

Impact: High

Mitigation strategy: Use encryption technology and access control to strengthen basic data protection measures during the development process.

- Difficulties in developing artificial intelligence:

Description: AI technology development is complex and may encounter problems such as low algorithm efficiency or difficulty in implementation.

Likelihood: Moderate

Impact: High

Mitigation strategy: The tutor discusses the progress of AI development and difficulties encountered, and seeks and refers to the tutor's opinions.

Meeting

- Daily stand-up meeting

We schedule short meetings every three days, lasting about 6 minutes. Each team member will take turns reporting on the progress of the past three days, future plans and obstacles encountered. This helps problems be identified and resolved in a timely manner, ensuring the project stays on schedule. Monitor progress and resolve any issues early.

- Weekly progress meetings with mentor

Hold weekly meetings with the mentor to report on the progress and latest developments of the current project. During the meeting, the team will share any project challenges and technical difficulties they encountered and seek professional advice and advice from their mentors. Meetings ensure that the project's research and development work meets established academic and practical standards. The meeting will also involve a discussion of upcoming tasks and goals to clarify the team's specific work plan for the coming week.

- Weekly meetings with clients

Weekly client meetings are mainly used to present the latest progress of the project and ensure that the development work meets the specific needs of the client. During the meeting, the team will discuss and evaluate any new requirements or required changes based on customer feedback. Such interaction helps to adjust development direction in a timely manner, optimize product functions, and ensure that the final delivered product can meet customer expectations.

- Review and retrospective meetings

At the end of the sprint, we will schedule a review meeting. In this meeting, each team member will present their work and gather feedback. Additionally, we will hold retrospective meetings where team members will discuss the successes and challenges of the Sprint process and lessons learned. This will help us improve in future Sprints.

Gantt chart

	ID	Name	↓	Start Date	End Date	Duration
☰	1	▼ Sprint3		May 03, 2024	May 31, 2024	20.75 days
☰	4	Integrated AI to automatically adjust camera settings		May 06, 2024	May 20, 2024	11 days
☰	2	Enable viewing and downloading of historical thermal imaging data		May 03, 2024	May 14, 2024	7.75 days
☰	3	Download Images with RGB Values or Light Intensity Matrices		May 15, 2024	May 28, 2024	10 days
☰	5	Develop AI-driven thermal signature recognition and health anomaly detection algorithms		May 20, 2024	May 31, 2024	10 days
☰	6	Database designed for secure thermal imaging data storage and management		May 14, 2024	May 31, 2024	14 days

