

# Fall Detection Algorithm for Elderly People Living Alone Based on ARKit and YOLOv5

## Team Members and Contributions

### 1. **Saniya Pandita – UI Developer (25%)**

Saniya played a key role in designing the user interface of the application. She was responsible for ensuring that the visual layout was user-friendly and consistent across multiple platforms, including mobile and web. Her work focused on enhancing the user experience through responsive design, clean navigation, and intuitive controls. She also conducted usability tests and implemented feedback to improve user interaction and system accessibility.

### 2. **Jayadithya Nalajala – Full Stack Developer (25%)**

Jayadithya contributed to the complete application architecture, focusing on both the front-end and back-end integration. He was in charge of the data flow and communication between modules, ensuring seamless interaction between the UI and the machine learning back-end. He also optimized the performance of the system by streamlining server responses, enhancing security measures, and managing deployment infrastructure.

### 3. **Sai Jahnavi Devabhakthuni – ML and Data Engineer (25%)**

Sai Jahnavi was responsible for the core machine learning aspects of the project. She trained the YOLOv5 model for fall detection, integrated it into the system, and developed a reliable data processing pipeline. Her work ensured that the fall detection model performed with high accuracy and robustness. She also handled data labeling, augmentation, and evaluation metrics, contributing significantly to model performance and reliability.

### 4. **Hui Jin – AI Developer (25%)**

Hui focused on integrating ARKit with AI components to enhance spatial awareness and real-time monitoring. She implemented real-time motion capture using ARKit and aligned it with the fall detection logic provided by the YOLOv5 model. Her work brought essential augmented reality capabilities to the system, enabling immersive and accurate detection of falls, which is crucial for real-world applications.

# Contribution Summary

Team Member	Role	Contribution (%)
Saniya Pandita	UI Developer	25%
Jayadithya Nalajala	Full Stack Developer	25%
Sai Jahnavi Devabhakthuni	ML and Data Engineer	25%
Hui Jin	AI Developer	25%
Total		100%