



# Robotic Arm manipulation for ball collection

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# Use Case

**Project Overview:** Introduction to a robotic arm system designed ball collection.

**Goal Functionality:** The arm autonomously locates, collects, and deposits baseballs into a designated bucket.

**Efficiency Improvement:** Aims to reduce manual labor and time spent in gathering balls after practice sessions.

**Safety and Precision:** Ensures safe operation in environments shared with players, offering precise and reliable ball handling.

**Technological Integration:** Utilizes advanced sensors and programming for effective and autonomous baseball collection.

# Frank-Emika Panda Arm

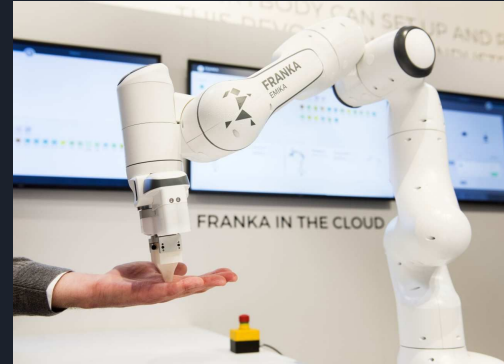
**Highly Sensitive Robotics:** The Panda Arm is renowned for its sensitivity and precision, mimicking the human arm.

**7-Axis Mobility:** Equipped with seven degrees of freedom, providing flexibility and dexterity in movement.

**Force-Sensitive Operations:** Features integrated force sensors in all seven axes for delicate and adaptive handling.

**User-Friendly Interface:** Offers a user-friendly programming environment, making it ideal for educational and research projects.

**Versatility in Applications:** While designed for industrial applications, its adaptability makes it suitable for varied tasks like sports equipment handling.



# Demo





# Future Work

Improve object recognition capabilities to pick up any ball in surroundings

Mobilize the robot to increase its range of operation

Extend the robot to be able to throw the balls