Flowchart:

- **System Start**
- **System Initialization** — Raspberry Pi
- **Start Vibrating Feeder** — ESP32
- **Capture Image Frame** — Raspberry Pi
- **Pre-process Image** — Raspberry Pi
- **Detect Berries** — Raspberry Pi
- **BerryDetected?**
  - No → Capture Image Frame
  - Yes → Classify Berry (CNN Model) — Raspberry Pi
- **Track Position Calculate Velocity** — Raspberry Pi
- **Send Data via UART** — Raspberry Pi
- **Receive Berry Data** — ESP32
- **UnripeBerry?**
  - No → Continue
  - Yes → Calculate EjectionTiming — ESP32
- **Trigger SolenoidActuator** — ESP32
- **Continue**
- **StopCommand?**
  - No → Capture Image Frame
  - Yes → System Stop
- **System Stop**

Legend:
- Raspberry Pi 3 Tasks
- ESP32 Tasks