1. Title

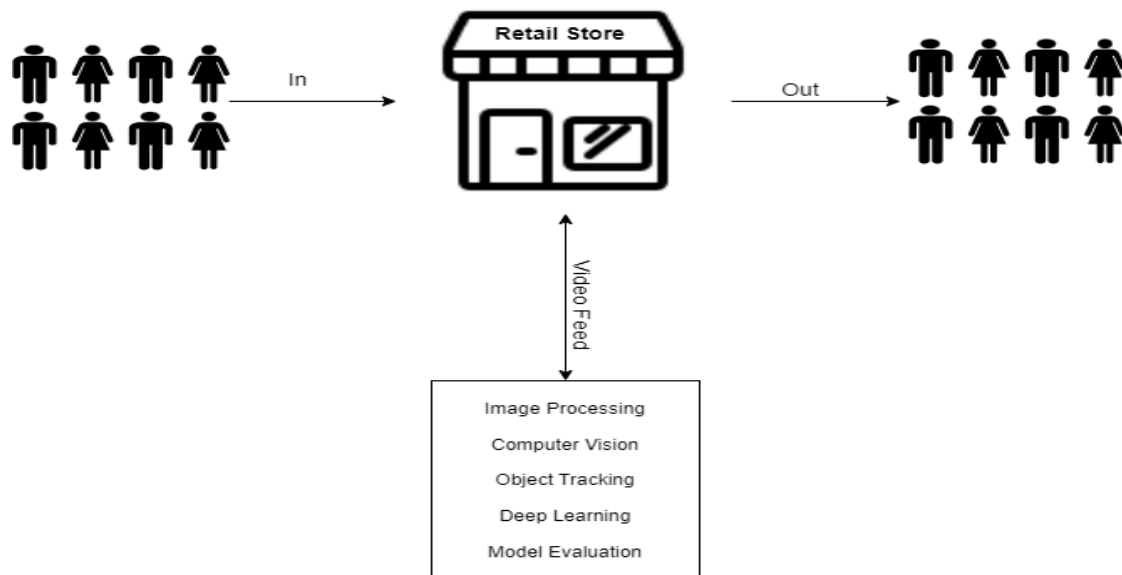**Proof of Concept: Intelligent Footfall Analysis through Computer Vision**

2. Problem Description

The aim is to create a computer vision system that accurately counts and analyzes the footfall in a retail store. The system will use video feeds to detect and track customer movement, providing valuable insights into store traffic patterns.

3. Outcomes

- A computer vision model that can count store visitors with high accuracy.
- Documentation detailing the model's design, implementation, and evaluation.
- A presentation that demonstrates the model's potential to optimize store operations.

4. Modules to Implementation

- **Data Collection**: Gather and preprocess a large dataset of labeled images
- **Video Capture**: Module to capture video footage in the store.
- **Image Processing Module**: Develop algorithms to process video frames and detect individuals.
- **Counting Algorithm Module**: Implement and train a model to count individuals accurately.
- **Evaluation**: Assess the model's performance using appropriate metrics
- **Documentation**: Thoroughly document the development process and findings.
- **Presentation**: Prepare a compelling presentation for stakeholders.

5. Milestones with Detailed Explanation for 8 Weeks

- **Week 1-2**: Video Capture Setup
    - Collect a diverse dataset from various online sources.
    - Develop scripts to access real-time came feed.
- **Week 3-4**: Image Processing Development
    - Design algorithms to identify and track individuals across frames.
    - Test and refine the algorithms for different lighting and crowd conditions.
- **Week 5-6**: Counting Algorithm Prototyping
    - Develop a prototype model that can count individuals from video data.
    - Train the model on annotated video footage to ensure accuracy.
- **Week 7-8**: Documentation
    - Document the algorithm development and model training processes.
    - Compile a comprehensive report on the prototype's performance.
    - Create a presentation that highlights the POC's objectives, methodology, and results.

6. Evaluation Criteria Based on Milestones

- **Accuracy of Detection**: The precision with which the system detects and counts individuals.
- **Algorithm Robustness**: The system's performance in varied environmental conditions.
- **Documentation Clarity**: The detail and clarity of the technical and process documentation.
- **Presentation Impact**: The effectiveness of the presentation in conveying the solution's value.