Product Documentation for AI System

1. Introduction

This document provides an overview of the AI system 'VisionAI'. The system is designed to perform real-time object detection and classification in images and videos. It employs state-of-the-art neural networks to deliver high accuracy and robustness.

2. Use Cases

The AI system has been deployed in the following scenarios:

- Autonomous Vehicles: Identifying objects on the road.

- Retail: Monitoring customer behavior for insights.

- Healthcare: Assisting in medical image diagnosis.

3. Technical Specifications

3.1 Neural Network Architecture

The system uses a convolutional neural network (CNN) based on ResNet-50.

3.2 Data Handling

- Input: JPEG, PNG formats; 720p, 1080p resolutions.

- Output: Labeled bounding boxes or classification scores.

3.3 Performance Metrics

- Accuracy: 98%

- Latency: 50ms per frame.

4. Risks and Mitigations

4.1 Identified Risks

- Type 1 Bias: Variability in performance across different object categories.

- Security Risks: Vulnerability to adversarial attacks.

4.2 Mitigation Strategies

- Regularly retrain the model with diverse datasets.

- Implement anomaly detection for adversarial input.

5. Conclusion

The VisionAI system is a reliable and efficient tool for object detection and classification. Continuous monitoring and updates will ensure its performance and adaptability.