**FUTURE ENHANCEMENT:**

The base paper "Deep Learning based Abnormal Event Detection in Pedestrian Pathways" outlines several potential future enhancements to improve the system further. Here are some proposed enhancements:

**Integration of Additional Sensors:** Incorporating other types of sensors such as infrared cameras, depth sensors, or thermal cameras could enhance the detection accuracy, especially in low-light or adverse weather conditions.

**Real-Time Processing:** Improving the system to handle real-time video feeds more efficiently, ensuring faster detection and response to anomalies.

**Enhanced Feature Extraction:** Utilizing more advanced feature extraction techniques or combining multiple feature extraction methods to improve the robustness of anomaly detection. Incremental Learning: Implementing incremental learning to continuously update the model with new data, allowing the system to adapt to new types of anomalies without requiring complete retraining.

**Hybrid Models:** Combining deep learning with other machine learning techniques, such as reinforcement learning, to improve the detection performance and adaptability of the system.

**Scalability:** Enhancing the system's scalability to handle larger datasets and more extensive networks of cameras, ensuring consistent performance across different environments.

**User Interface Improvements:** Developing a more intuitive and interactive user interface for easier monitoring and management of the surveillance system.

**Robustness to Environmental Changes:** Improving the system's robustness to environmental changes, such as varying lighting conditions, weather changes, or camera angles, to maintain high detection accuracy.

**Privacy Preservation:** Incorporating privacy-preserving techniques to ensure that the surveillance system adheres to privacy regulations and protects individuals' identities.

**Collaborative Surveillance:** Enabling collaborative surveillance where multiple systems can share information and work together to detect anomalies more effectively.

These enhancements aim to make the anomaly detection system more accurate, efficient, and adaptable to various real-world conditions and requirements