**Project Documentation for AI vs Real Image Classifier**

1. **Project Overview**
   * The AI vs Real Image Classifier is a sophisticated tool designed to address the challenge of distinguishing between images generated by artificial intelligence and those captured from the real world. This project leverages the ResNet-101 architecture, a deep convolutional neural network that excels in image classification tasks. The classifier has been trained on a comprehensive dataset, enabling it to identify and categorize images with high precision.
   * **Objectives and Goals:** The primary objective of the AI vs Real Image Classifier is to provide an accurate, efficient, and user-friendly platform for image classification. The goals of the project include:
     + Developing a reliable model that can differentiate between AI-generated and real images.
     + Creating an accessible web interface for users to interact with the classifier.
     + Ensuring the tool can be used effectively across various industries for image authentication.
   * **Key Features and Capabilities**
     + **Customized ResNet-101 Model:** Utilizes a powerful deep learning architecture known for its accuracy in image classification.
     + **User-Friendly Interface:** Streamlit framework enables a clean and intuitive web interface for easy interaction.
     + **Real-Time Classification:** Offers quick and reliable classification results upon image upload.
2. **System Requirements**
   * **Hardware Requirements**
     + No specific hardware is required for users as the classifier is web-based and runs on the server side.
   * **Software Dependencies**
   * **Environment Setup**
3. **Architecture**
   * **Detailed Description of System Architecture**
   * **Diagrams and Flowcharts**
   * **Explanation of Key Components**
4. **Model Details**
   * **Description of the ResNet-101 Model**
   * **Customizations and Modifications**
   * **Data Preprocessing and Augmentation**
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   * **Training Procedure**
   * **Evaluation Metrics and Results**
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   * **Interface Components**
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   * **Example Use Cases**
   * **Troubleshooting Common Issues**
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