Creating a deep learning image classification project involves several steps, including data collection, preprocessing, model building, training, and evaluation. I'll provide you with a high-level outline of the project and some code snippets in Python using popular libraries like TensorFlow and Keras.

Note: This is a simplified example, and in practice, you may need to adapt and optimize it for your specific dataset and requirements.

Step 1: Data Collection

You need a dataset of labeled images. You can use datasets like CIFAR-10, MNIST, or collect your own dataset.

Step 2: Data Preprocessing

Preprocessing includes resizing images, normalizing pixel values, and splitting the dataset into training, validation, and test sets.

Step 3: Model Building

You can create a deep learning model using TensorFlow/Keras. A popular architecture for image classification is Convolutional Neural Networks (CNNs).

Step 4: Model Compilation

Compile the model by specifying the loss function, optimizer, and metrics.

Step 5: Model Training

Train the model on the training dataset.

Step 6: Model Evaluation

Evaluate the model on the test dataset and visualize training metrics.

Step 7: Prediction

You can use the trained model to make predictions on new images.

Remember that deep learning projects can be complex, and there are many ways to fine-tune and optimize your models. You may also want to explore techniques like data augmentation, transfer learning, and hyperparameter tuning to improve performance further.