animal\_image\_classification/

│── data/ # Dataset storage (raw & processed)

│ ├── raw/ # Original images

│ ├── processed/ # Preprocessed images (resized, augmented)

│── notebooks/ # Jupyter notebooks for EDA & model prototyping

│ ├── data\_exploration.ipynb

│ ├── model\_training.ipynb

│── src/ # Source code for model training & prediction

│ ├── data\_preprocessing.py # Data augmentation, normalization

│ ├── model.py # Model architecture

│ ├── train.py # Model training script

│ ├── predict.py # Model inference script

│ ├── evaluate.py # Model evaluation script

│── models/ # Saved models

│ ├── animal\_classifier.h5 # Trained model file

│── logs/ # Training logs

│ ├── training.log

│── config/ # Configuration files

│ ├── config.yaml # Hyperparameters & dataset paths

│── tests/ # Unit tests for pipeline

│ ├── test\_preprocessing.py

│ ├── test\_model.py

│── webapp/ # Deployment interface (Flask/Django/Streamlit)

│ ├── app.py # Flask or Streamlit API

│ ├── templates/ # Frontend HTML (if Flask used)

│ ├── static/ # CSS/JS files (if needed)

│── requirements.txt # Required dependencies

│── Dockerfile # Dockerfile for containerization

│── .gitignore # Ignore unnecessary files

│── README.md # Documentation

│── setup.py # Package setup script (if needed)

│── pipeline.yaml # VS Code CI/CD pipeline configuration