CSCI 576 - Computer Vision
Assignment #2

Objective: This assignment aims to provide hands-on experience with fundamental and advanced concepts in classification-based computer vision by running and analyzing provided code examples.

Instructions:

For each of the following articles, you are required to:

- **Read and Understand:** Thoroughly read the article to grasp the main concepts, methodologies, and the purpose of the code.
- **Run the Code:** Execute the provided code examples. Ensure you have the necessary environment set up (e.g., TensorFlow, Keras, Python, Colab).
- **Document Outputs:** Take clear screenshots of the key outputs generated by the code. Your screenshots should show evidence that they are captured by you. This includes, but is not limited to:
    - Model training progress (e.g., loss and accuracy curves).
    - Results of image classifications or transformations.
    - Visualizations generated by the models.
    - Any specific outputs highlighted in the articles.
- **Identify and Solve Problems:** As you run the code, you may encounter issues (e.g., dependency errors, version conflicts, runtime errors). Document these problems in detail and explain the steps you took to resolve them. If you couldn't solve a problem, describe your attempts and the current state of the issue.
- **Summarize Key Learnings:** Briefly summarize the main concepts and takeaways from each article in your own words.

Articles:

1. **Image classification from scratch**
    - https://keras.io/examples/vision/image_classification_from_scratch/
2. **Image classification via fine-tuning with EfficientNet**
    - https://keras.io/examples/vision/image_classification_efficientnet_fine_tuning/
3. **Learning to Resize in Computer Vision:**
    - https://keras.io/examples/vision/learnable_resizer/
4. **Visualizing what convnets learn:**
    - https://keras.io/examples/vision/visualizing_what_convnets_learn/
5. **Vision transformer:**
    - https://keras.io/examples/vision/image_classification_with_vision_transformer/
6. **Federated Learning**
    - https://colab.research.google.com/github/tensorflow/federated/blob/v0.4.0/docs/tutorials/federated_learning_for_image_classification.ipynb