This report presents a comparative analysis between two Vision Transformer (ViT) models: **jonathanfernandes/vit-base-patch16-224-finetuned-flower** and **google/vit-base-patch16-224**. These models are designed for image classification tasks and have been fine-tuned for specific domains.

**Model Overview:**

* **jonathanfernandes/vit-base-patch16-224-finetuned-flower**: This model is a ViT architecture fine-tuned specifically for flower image classification tasks. It is trained on a dataset containing various species of flowers and aims to accurately classify them based on their images.
* **google/vit-base-patch16-224**: The Google ViT model is a general-purpose ViT architecture trained on a diverse range of images. It is pre-trained on a large-scale dataset and can be fine-tuned for various image classification tasks.

**Evaluation Metrics:** To compare the performance of these models, we evaluated them using standard image classification metrics, including:

* **Accuracy:** The proportion of correctly classified images.
* **Loss:** The difference between predicted and actual values during training.

**Results:**

1. **Loss:**
   * **google/vit-base-patch16-224**: Eval Loss = 6.576
   * **jonathanfernandes/vit-base-patch16-224-finetuned-flower**: Eval Loss = 4.629

The evaluation loss for the **jonathanfernandes/vit-base-patch16-224-finetuned-flower** model is lower, indicating better performance in minimizing prediction errors compared to the **google/vit-base-patch16-224** model.

1. **Accuracy:**
   * **google/vit-base-patch16-224**: Eval Accuracy = 17.02%
   * **jonathanfernandes/vit-base-patch16-224-finetuned-flower**: Eval Accuracy = 38.3%

The **jonathanfernandes/vit-base-patch16-224-finetuned-flower** model achieves a significantly higher accuracy compared to the **google/vit-base-patch16-224** model, indicating better performance in correctly classifying images.

1. **Runtime:**
   * **google/vit-base-patch16-224**: Eval Runtime = 22.7502 seconds
   * **jonathanfernandes/vit-base-patch16-224-finetuned-flower**: Eval Runtime = 19.5305 seconds

The **jonathanfernandes/vit-base-patch16-224-finetuned-flower** model has a slightly lower evaluation runtime compared to the **google/vit-base-patch16-224** model, suggesting faster inference times.

1. **Samples Per Second:**
   * **google/vit-base-patch16-224**: Eval Samples Per Second = 2.066
   * **jonathanfernandes/vit-base-patch16-224-finetuned-flower**: Eval Samples Per Second = 2.406

The **jonathanfernandes/vit-base-patch16-224-finetuned-flower** model processes more samples per second during evaluation, indicating better efficiency in handling input data.

In summary, the **jonathanfernandes/vit-base-patch16-224-finetuned-flower** model demonstrates superior performance in terms of lower loss, higher accuracy, and faster inference times compared to the **google/vit-base-patch16-224** model.