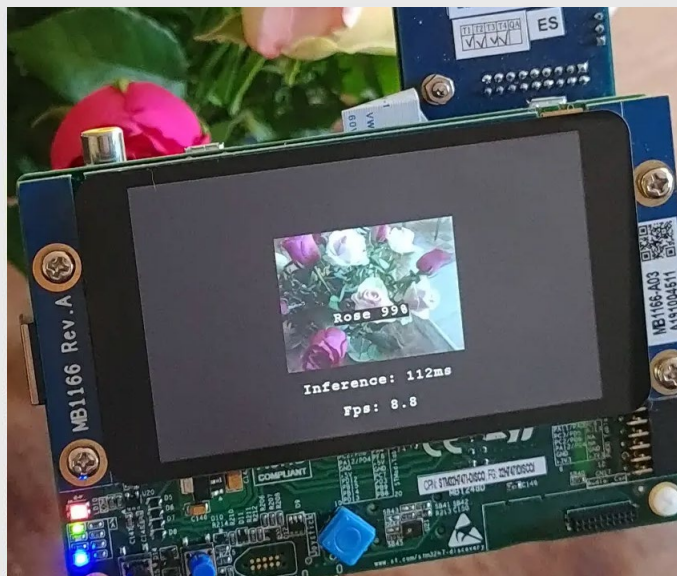


Transfer learning applied to flower recognition



Data collection and annotation is often a tedious and time-consuming task to get satisfying image classification results. The transfer learning technique enables to overcome this challenge by reducing the number of images and the training time needed to add a new class. It is applied here to flower classification, but it can be extended to many other use cases.

[More details on this use-case →](#)

Approach

The tutorial presents how to use a technique called “Transfer learning” to quickly train a deep learning model to classify images. The tutorial is based on the computer vision function pack FP-AI-VISION1

Sensor

Vision: Camera module bundle (reference: [B-CAMS-OMV](#))

Data

Dataset: [Dataset for flower recognition \(License CC BY 2.0\)](#)

Data format:

5 classes of flowers: daisy, dandelion, rose, sunflower, tulip
RGB color images

Results

Model: MobileNetV2 alpha 0.35

Input size: 128x128x3

Memory footprint:

406.86 KB Flash for weights

224.5 KB RAM for activations

Accuracy:

Float model: **86.78%**

Quantized model: **86.38%**

Performance on STM32H747 (High-perf) @ 400 MHz

Inference time: **110.27 ms**

Frame rate: **9.0 fps**