Edge AI

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Last year we discussed how to create IoT devices for rapid deployment. This year, in the same vein, we will demonstrate how to create a device running a DNN and show remotely performed visual servoing.

The AeroCore for DragonBoard was our first drone and robotics mezzanine for 96Boards, built with the Geppetto online design-to-order system. We will show the latest generation of boards for a set of ARM processors running image recognition to compare:

- Nvidia Jetson TX2
- Dragonboard 410c
- Raspberry Pi CM3
Our Process

Validate with Jetson TX2 on AeroCore
Tensorflow model off-the-shelf
Control routines on AeroCore
Integrate ROS and MavROS

Repeat Build for
DragonBoard
Raspberry Pi
HiKey 960
AeroCore2 for Jetson

Initial Process

- Hardware validation of cameras
- JetPack and Tensorflow
- COCO
- Bounding boxes
- Publish
- Servoing at 20 fps

MavROS for Drone Control
Other Architectures

DragonBoard 410c
Raspberry Pi CM3
Hikey 960

Future
Cortex M7
CMSIS/ARM NN
ONNX
Design inflection points
Data path
Graph and Model Engine
Model training

Geppetto Limited Offer
Build and test 2 boards for 1 manufacturing fee.

https://geppetto.gumstix.com