Building Vision Edge Solution with Vision AI Dev Kit

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Why Intelligent Edge?

High-speed data processing, analytics and shorter response times are more essential than ever.

Intelligent Cloud
• Business agility and scalability: unlimited computing power available on demand.

Intelligent Edge
• Can handle priority-one tasks locally even without cloud connection.
• Can handle generated data that is too large to pull rapidly from the cloud.
• Enables real-time processing through intelligence in or near to local devices.
• Flexibility to accommodate data privacy related requirements.
Why Vision AI Dev Kit?

High-speed and volume of Frame processing on edge, building machine learning models and IoT edge management are more essential than ever.

Vision AI Dev Kit

- Provide an easy and unified way to build, manage and deploy Vision related solution even without cloud connection.
- To share work done by Microsoft and our partners in Vision AI field to democratize AI for all
- Allow developers and data scientist to quickly build solutions and share their work
Vision AI Developer Kit
Hardware Specification

Technical Information

<table>
<thead>
<tr>
<th>Main board</th>
<th>Vision AI developer kit</th>
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<tbody>
<tr>
<td>OS</td>
<td>Yocto Linux</td>
</tr>
<tr>
<td>SOC</td>
<td>Qualcomm QC5603</td>
</tr>
<tr>
<td>PMIC</td>
<td>PME 605/8005</td>
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<tr>
<td>WiFi/BLE</td>
<td>WiFi/BLE WCN3990 (1x1)/BL 5.x</td>
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<tr>
<td>Camera</td>
<td>8MP/4K UHD</td>
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<tr>
<td>eMMC</td>
<td>16GB</td>
</tr>
<tr>
<td>LPDDR4x</td>
<td>4GB</td>
</tr>
<tr>
<td>Speaker/Mic</td>
<td>Line in / out / 4x Mic / Speaker</td>
</tr>
<tr>
<td>Ethernet (RJ45)</td>
<td>Via USB-C with adapter</td>
</tr>
<tr>
<td>Power</td>
<td>Rechargeable battery / PoE / USB-C</td>
</tr>
<tr>
<td>Storage</td>
<td>SD slot for micro SD card</td>
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<tr>
<td>Indicator</td>
<td>3x LEDs</td>
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<tr>
<td>USB</td>
<td>USB Type C</td>
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<tr>
<td>HDMI</td>
<td>HDMI A</td>
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Getting started with Vision AI Dev Kit

Tools For AI in VS Code

Build your first AI training model
1. Click HERE to download the sample model (see more details);
2. Press F5 to build and launch your model;
3. Congratulations! Your first AI training model is done. Try it out.

Training Samples (More)

MNIST using TensorFlow
Training & evaluating the MNIST network using a feed dictionary. MNIST is a popular dataset for handwritten digits

CIFAR10 using TensorFlow
Train and evaluate a CNN model on CPU with CIFAR10 dataset. CIFAR-10 is a common benchmark in machine learning for image

https://www.customvision.ai/

Visual Intelligence Made Easy
Easily customize your own state-of-the-art computer vision models that fit perfectly with your unique use case. Just bring a few examples of labeled images, and let Custom Vision do the hard work.

Upload Images
Bring your own labeled images, or use Custom Vision to quickly add tags to any unlabeled images.

Train
Use your labeled images to teach Custom Vision the concepts you care about.
Building AI Solutions for the Intelligent Edge
The components of a Vision AI application
Build your first Vision AI Dev Kit solution using 3 steps

1. Bring your images
2. Retrain using transfer learning
3. Manage and deploy using AML and Azure IoT
Vision AI Dev Kit Demo
Vision AI Development kit – System Architecture
Vision AI Dev Kit
A connected camera reference solution

https://visionaidevkit.com
THANKS!!