

Vecow

先進的 Edge AI 方案服務 加速實現智慧感知應用

深度學習 · 車載應用 · 智慧工廠 · 軌道交通 · 邊緣運算

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Sales Director
2023/03/23

Applications of Deep Learning

Applications



Autonomous vehicles



Automation



Public safety



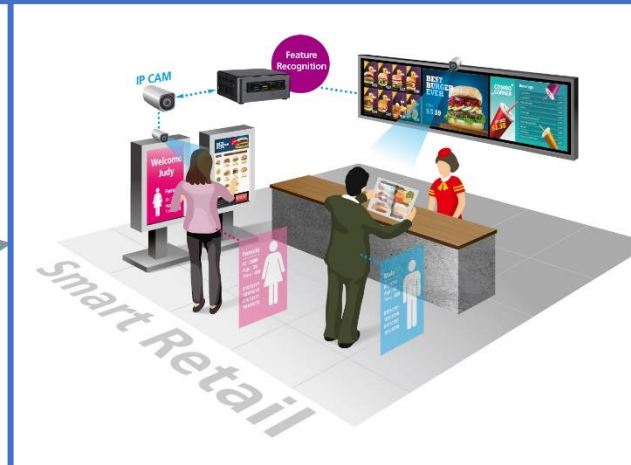
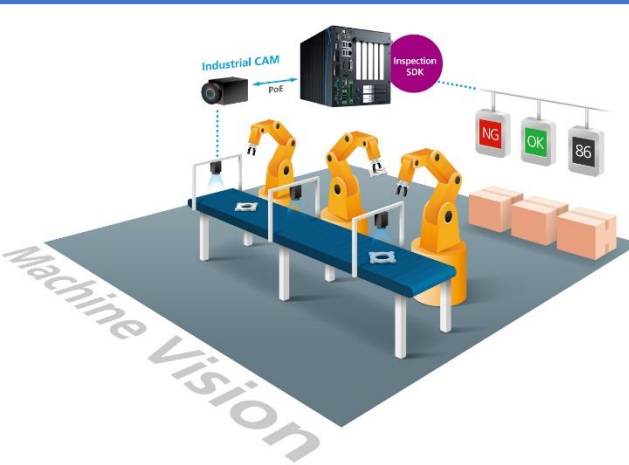
Traffic vision



Smart factory



Drones



Case Sharing



Industrial Safety - Labor & Spot

Pain Point:

Labor Skip Work/ Smoke/ No Safety Gear

Solution:

People Count/ Gear Detection/ Illegal Act



Case Sharing : Site Safety Monitoring

Object Detection



Hard Hat



Mask



Vest



intel.
partner
Gold
IoT Solutions



Area1 - WorkerWithShoes

count: 0, current: 0.0 s

Case Sharing



Industrial Safety - Labor & Spot

Pain Point:

Labor Skip Work/ Smoke/ No Safety Gear

Solution:

People Count/ Gear Detection/ Illegal Act



ECX-3000-PoER



ECX-3000 PEG

SOP Analysis - Ensure SOP Compliance

Pain Point:

Time-consuming/ None Real-time Report/ QC

Solution:

Cycle Time/ SOP Monitoring/ Real-time OEE Report



Case Sharing : SOP Compliance Monitoring

Motion
Detection



SOP Checking



Productivity



Abnormal LOG



Smart Agriculture

◆ Venue

Vineyard in France

◆ Application

Agricultural Autonomous Mobile Robots

◆ Product Solution

- Intel Edge Software Hub for AMR :
ECX-2000-PoE (Intel® Core™ i9-10900TE CPU + Intel® W480 PCH)
- Fanless -40°C to 75°C operating temperature
- 6 GigE LAN with 4 PoE+, 5G/4G/WiFi, 10G USB
- SW Ignition Control for in-vehicle operation
- UL, CE, EN50155, EN50121-3-2, EN55032



ECX-2000



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CONFIDENTIAL

Autonomous Robots for Last-mile Deliveries

◆ Venue

Residential Communities in USA

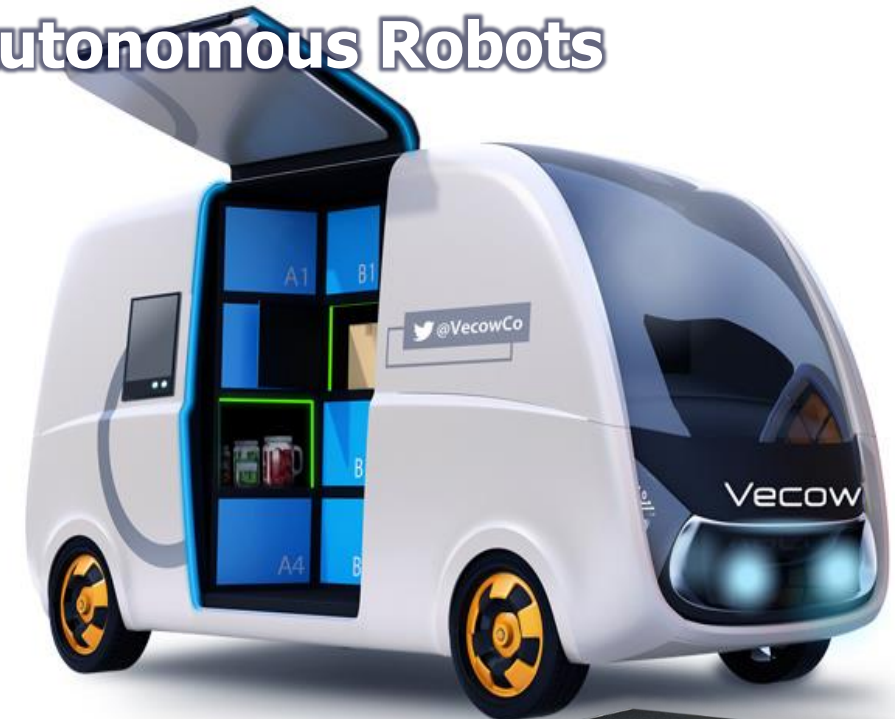
◆ Application

Autonomous Delivery Robots

◆ Product Solution

- Fanless AI Inference Platform :
EVS-2000 (Intel® Core™ Core i7-10700TE + Intel® W480 PCH + NVIDIA T1000 MXM)
- Real-time Sensors : Lidar, Radars, 360° Overlapping Cameras, Thermal Cameras, Ultrasonic
- Optimized for in-vehicle operation : 9V to 50V Power Input with 80V Surge Protection, Ignition Power Control
- Multiple 5G/WiFi/4G/LTE/GPRS/UMTS

Autonomous Robots



EVS-2000



VHub AI Developer Smart & Speedy AI Enabler

intel.
partner
Gold
IoT Solutions

intel
MARKET
READY

All-in-one Vision AI Development Kit

Labeling Tool



Training Platforms



AI Accelerator



Inferring Engine



AI-Ready Solution



Fire Detection



Forbidden Area



Gear Detection



Face Recognition

Deep Learning Deployment Process

Requires Massive Dataset to Train the Model

Unfriendly User Interface

Data Input

Labeling

Analysis

Training

Computing Performance
& Thermal Solution

Complex Software Stacks

Inference

Problems to Resolve

Software Development



Complex Diagram

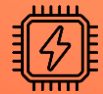


Learning Curve



Maintenance Effort

Hardware Requirements



Computing Performance



Versatile Interface



Thermal Solution

**High TCO
+
Time-consuming**

VHub AI Developer Premium



All-in-one "Codeless" AI Development Platform



Labeling

Model name	Size	Training time	Est. time	Consuming (MB)	Spent points	Training progress	Scheduled order	Estimated execution wait time	Training status	Time left	Chart	Cancel	
M1	0.096	2021-07-08 15:44:01	2021-07-08 16:21:38	42	0.7000	100%	Scheduling complete	---	Ready	---		View	Cancel
M2	0.028	2021-07-08 14:33:36	2021-07-08 15:13:22	42	0.7000	100%	Scheduling complete	---	Ready	---		View	Cancel

Training

Testing

ECX-3000

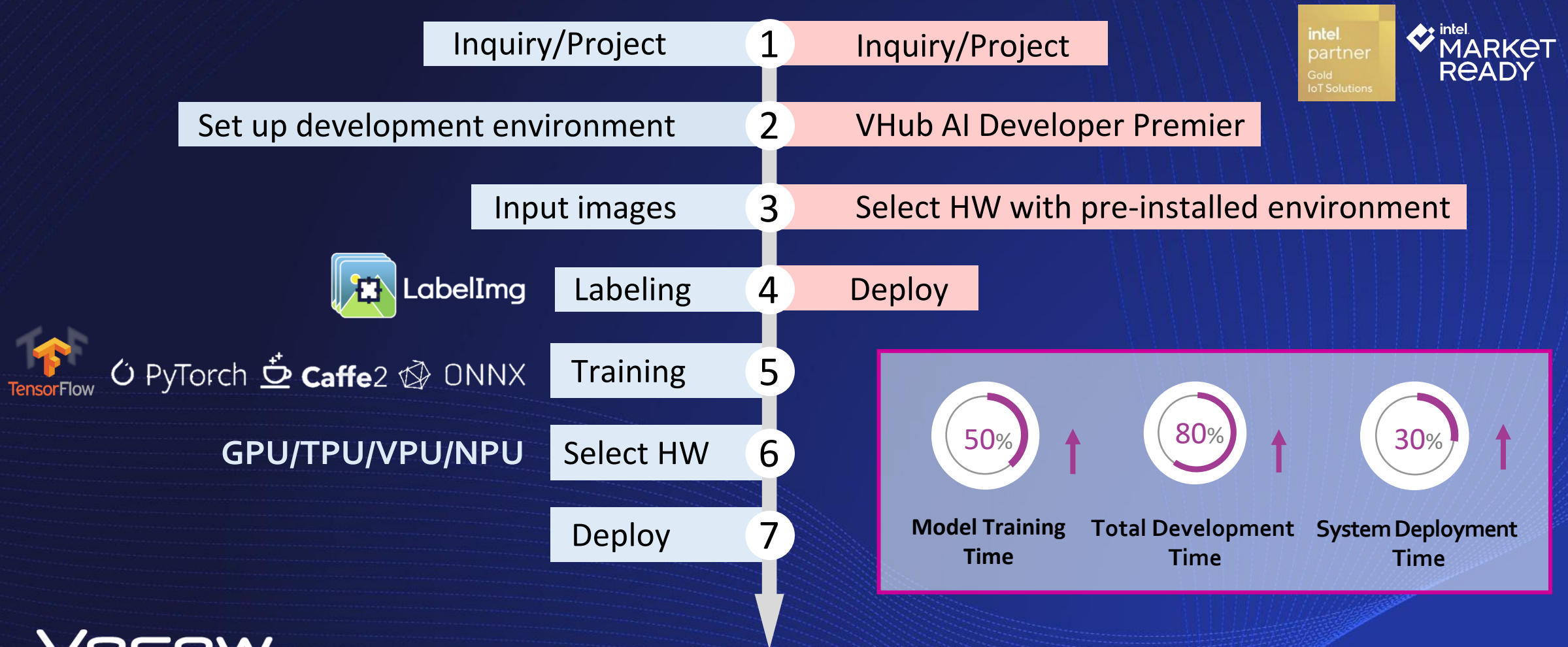
ECX-3000 PEG

Deployment



Faster Time-to-market for AI Development

Traditional AI Develop Process VS VHub AI Developer Premium



Vecow Edge AI Inference Ecosystem

Applications



Safety Control



AOI



Machine Vision



Smart Retail



Autonomous Driving

ML Framework



ONNX

PyTorch



Caffe2



Keras



SDK/ Libraries



ML Accelerator



Edge Platforms



One-Stop Edge AI Solution Service

Edge AI Applications



Autonomous Vehicles



Smart Robotics



Digital Rail



Public Security



Transportation & V2X



Smart Factory

One-Stop Solutions



Accelerate Platforms



Embedded Systems



Multi-Touch Solutions



Industrial Motherboards



Embedded Peripherals



Design & Manufacturing Services

Vecow Core Competencies

Leading Expertise

- Domain know-how
- Performance driven
- User oriented

Optimized Designs

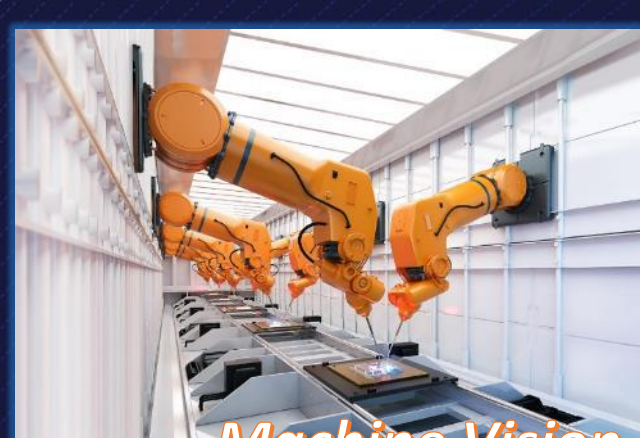
- Integrated features
- Small form factor
- High reliability

Easy Customization

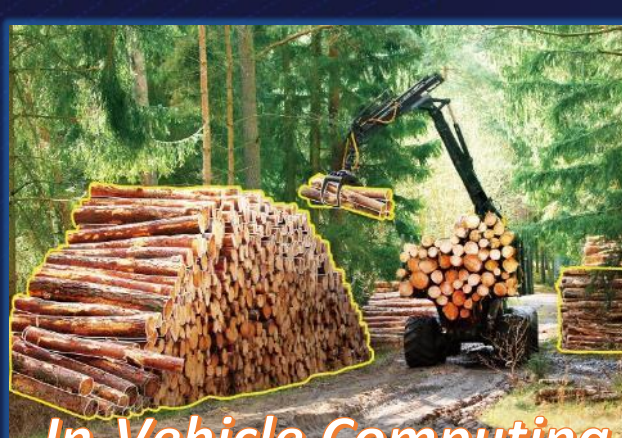
- Less efforts
- Lower cost
- Faster time-to-market

Flexible Teamwork

- One-stop service
- Top-tier ecosystem
- Win-win partnership



Machine Vision



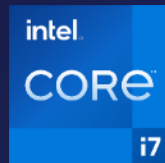
In-Vehicle Computing



Factory Automation



Public Security



- ✓ 24-core 13th/12th Gen Intel® Core™ i9/i7/i5/i3 processor (codename Raptor Lake-S/Alder Lake-S) + R680E PCH
- ✓ 9 LAN : 8 Independent 2.5G LAN with 4 IEEE 802.3at PoE+
- ✓ 6 USB 3.2 Gen 2, 2 2.5" SSD Tray or 4 M.2 SSD Tray
- ✓ DC 9V to 50V Power Input, Software Ignition Control
- ✓ Optional multiple 10G LAN/2.5G LAN/GigE LAN/SIM Socket
- ✓ Intel® vPRO, TSN, TPM 2.0 supported



ECX-3000

Workstation-grade Fanless System





Robotic Control



In-vehicle Computing



Public Security



Smart Manufacturing



- ✓ 24-core 13th/12th Gen Intel® Core™ i9/i7/i5/i3 processor (codename Raptor Lake-S/Alder Lake-S) + R680E PCH
- ✓ 4 PCIe 4.0, max 200W for dual low-profile discrete graphics
- ✓ 6 GigE LAN : 5 2.5G LAN with 4 IEEE 802.3at PoE+, optional X-Coded M12 Connector
- ✓ 6 10G USB 3.2 Gen 2, 1 20Gbps USB 3.2 Gen 2x2 Type-C
- ✓ DC 12V to 50V Power Input, Software Ignition Control
- ✓ Intel® vPRO, TPM 2.0, TSN supported

ECX-3000 PEG

Expandable AI Inference Workstation





ADAS



Mobile Communication



Public Security



In-Vehicle Computing



- ✓ 13th/12th Gen Intel® Core™ i9/i7/i5/i3 processor (codename Raptor Lake-S/Alder Lake-S) + R680E PCH
- ✓ 10 LAN : 8 2.5G X-coded M12 with 4 PoE+, 2 RJ45
- ✓ DC 16V to 160V Power Input with 4kV Isolation, 500V Surge Protection, Optional UPS
- ✓ Max 6 front-access 7 to 15mm height 2.5" SSD/HDD Tray
- ✓ EN50155 : 2017 & EN45545-2 Compliant

IVX-1000 ICY

Workstation-grade In-Vehicle AI Computing System



Vecow

Everyone deserves a better system

intel.
partner

Gold
IoT Solutions