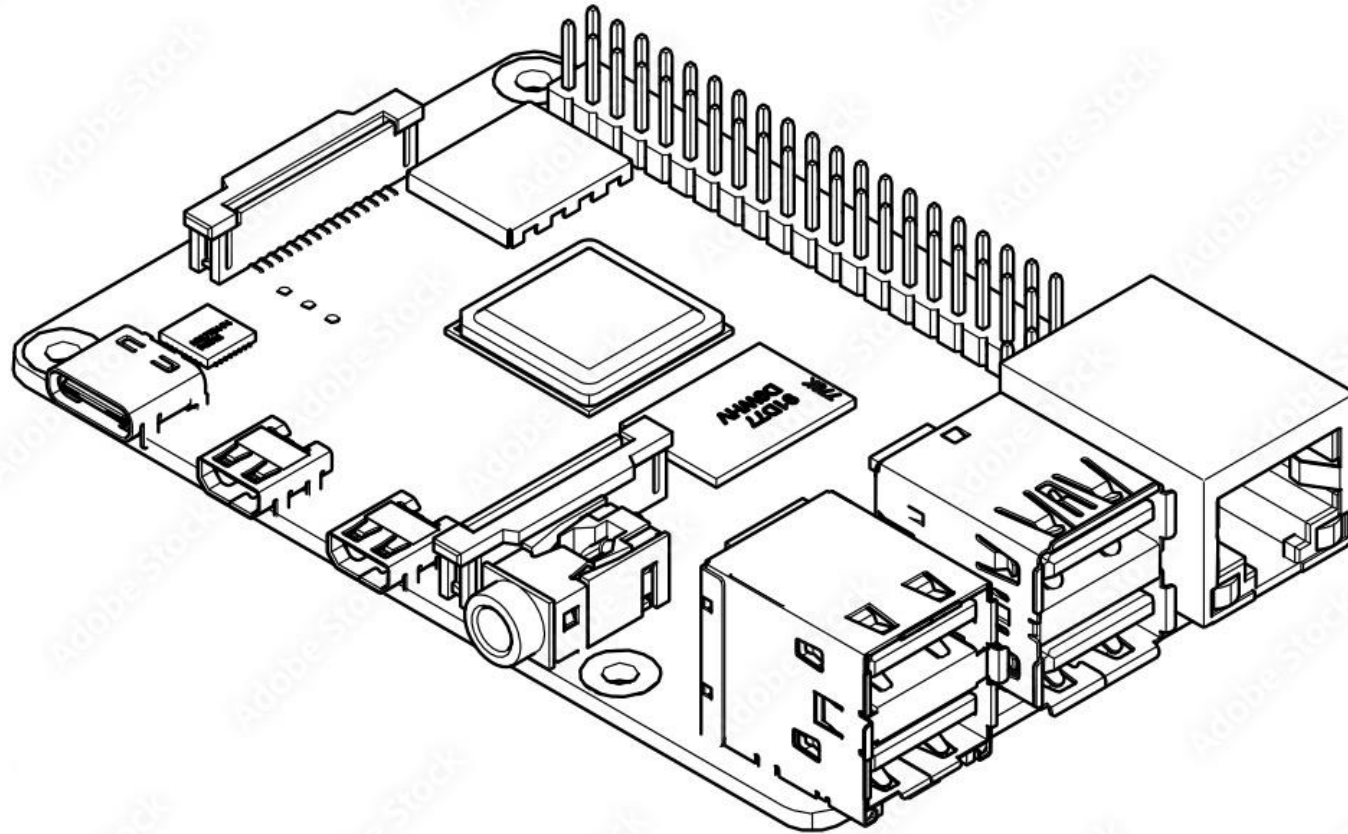


AI on the Edge

Edge Computing with the Raspberry Pi 5



Alan Underwood - September 27, 2024

Agenda: 30mins...ish

5mins **Survey:** Edge Computing?

10mins **What even is Edge Computing?**

- Raspberry Pi
- NVIDIA Jetson Orin
- Others (Orange Pi, etc)

How do I use Edge Computing?

How can YOU use Edge Computing?

15mins **Demo:** Real Time AI with the Raspberry Pi 5

Survey!

What is Edge Computing?

Why

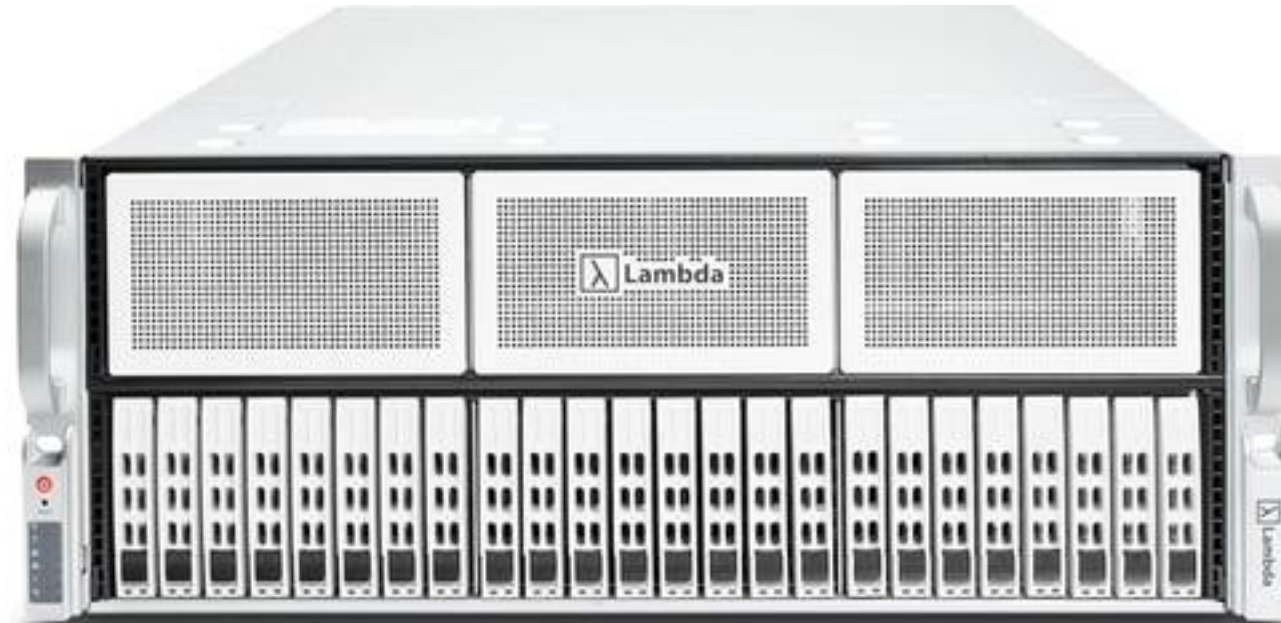


~~**What is Edge Computing?**~~

Cost...

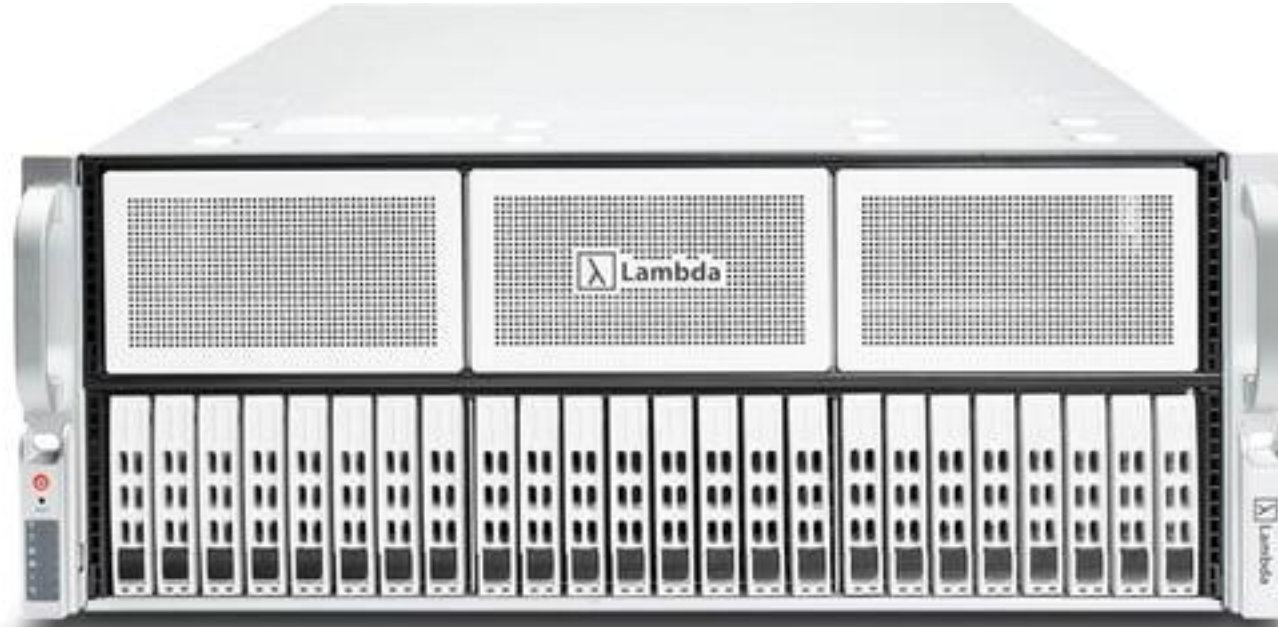


8x NVIDIA H100



\$78,000 - \$250,000

Open AI GPT-3



Estimated Training Cost = \$4,600,000

**OpenAI's DALL-e was trained on
1,024 NVIDIA A100 GPUs**

Potential Training Cost of DALL-e



$$1024 / 8 * \$250,000 = \$32,000,000$$



\$10,000 - \$22,000

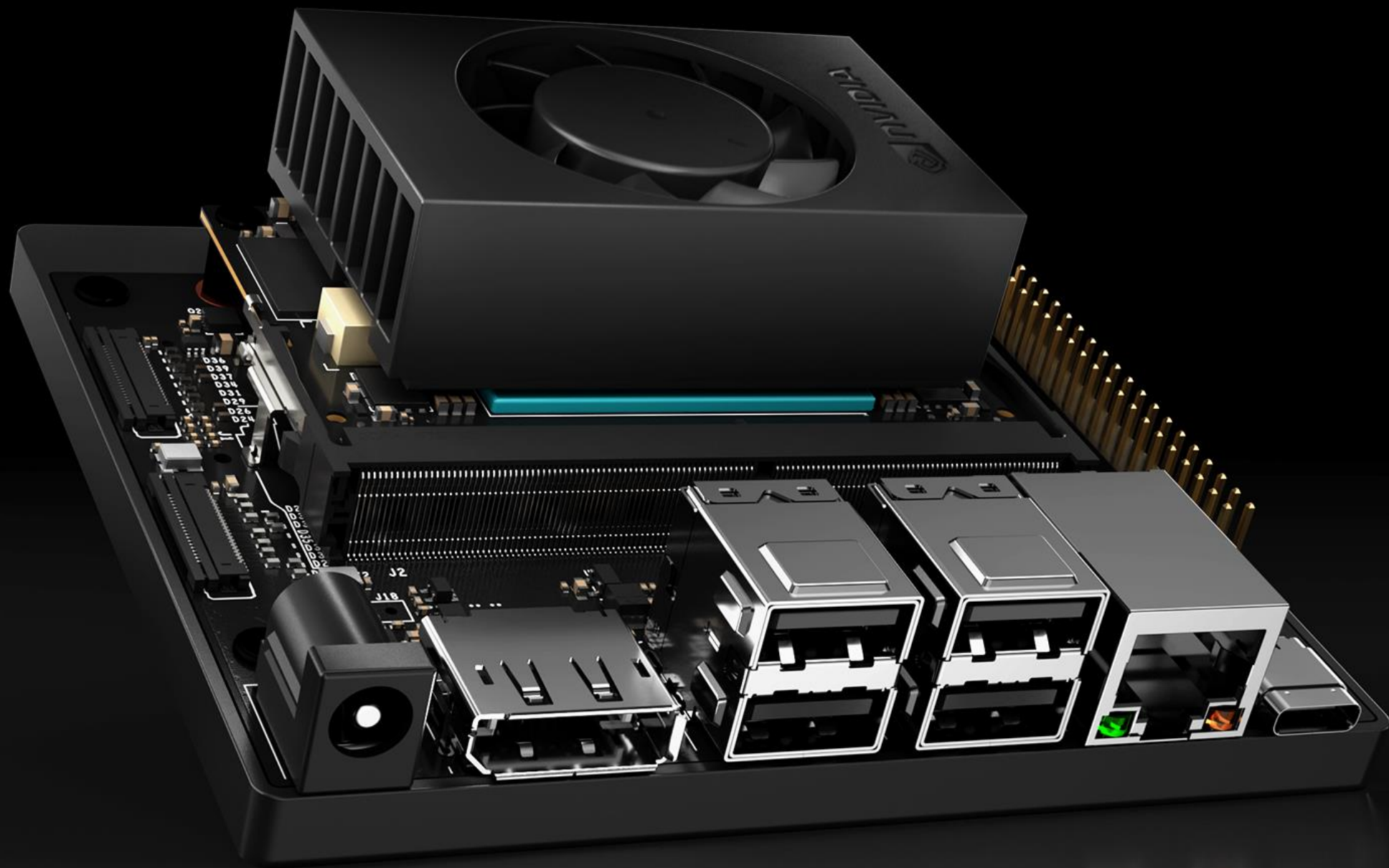


\$84 per week x 52 = \$4,368

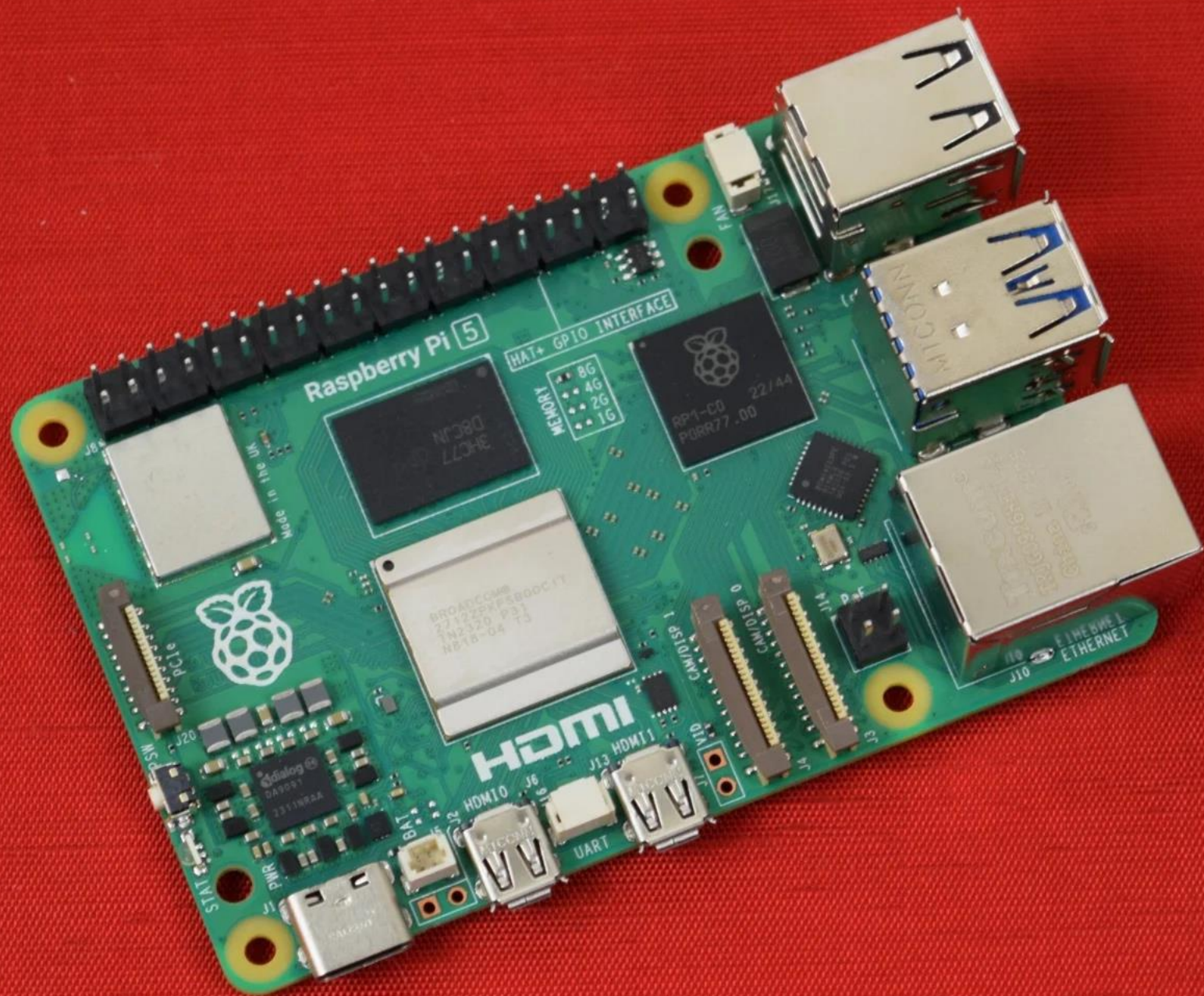


\$9,000 + tax (shipping is free)

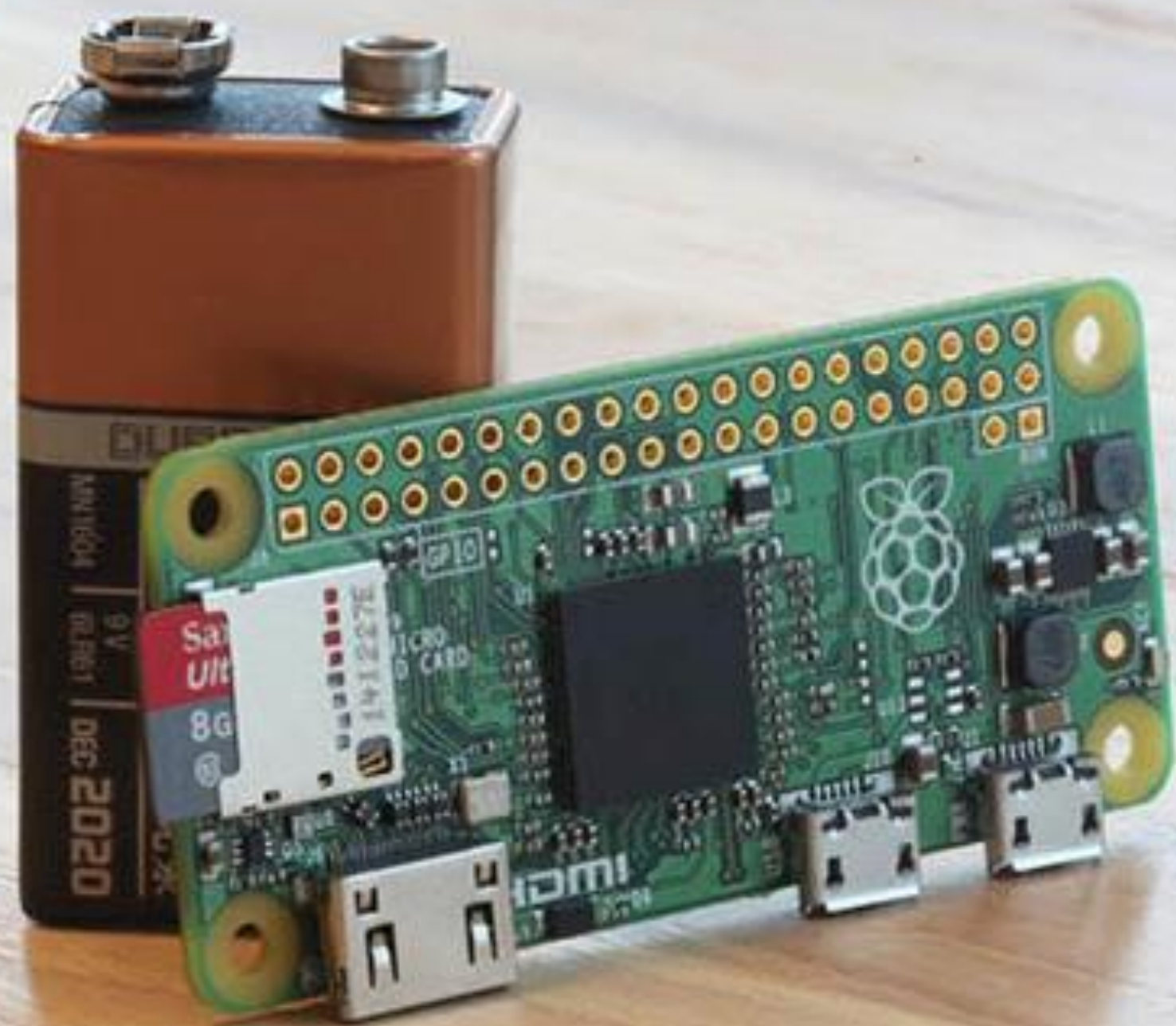
What is Edge Computing?









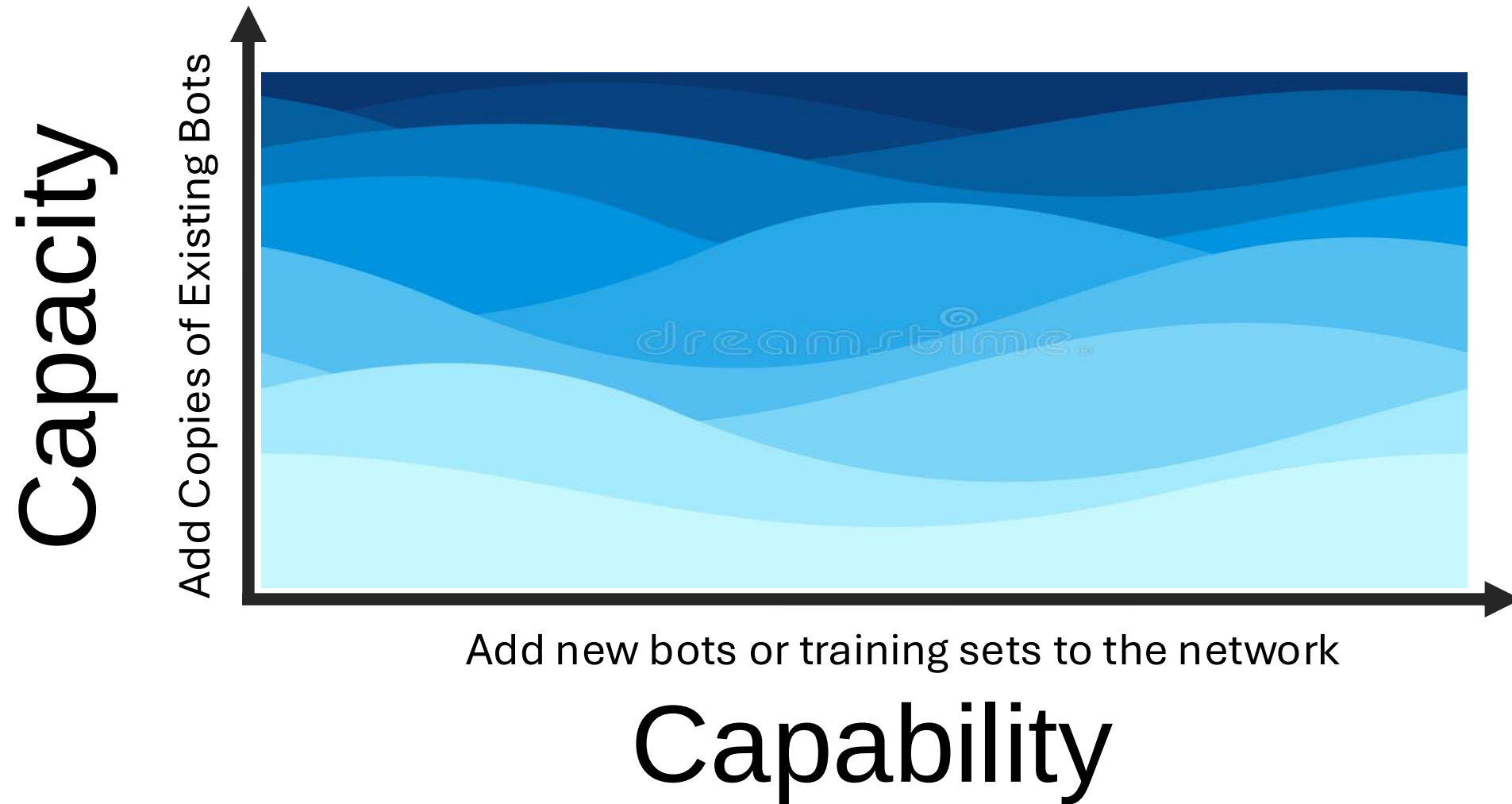


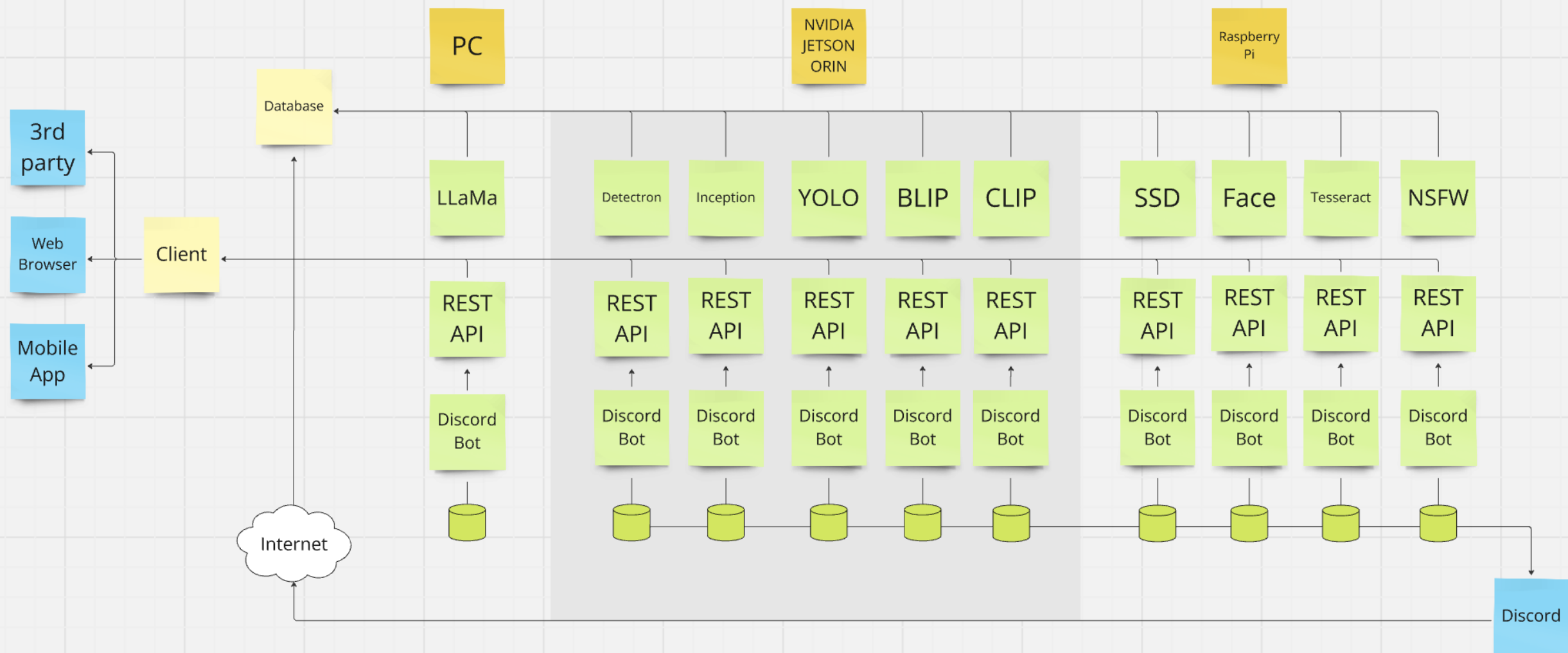
\$25



How do I use Edge Computing?

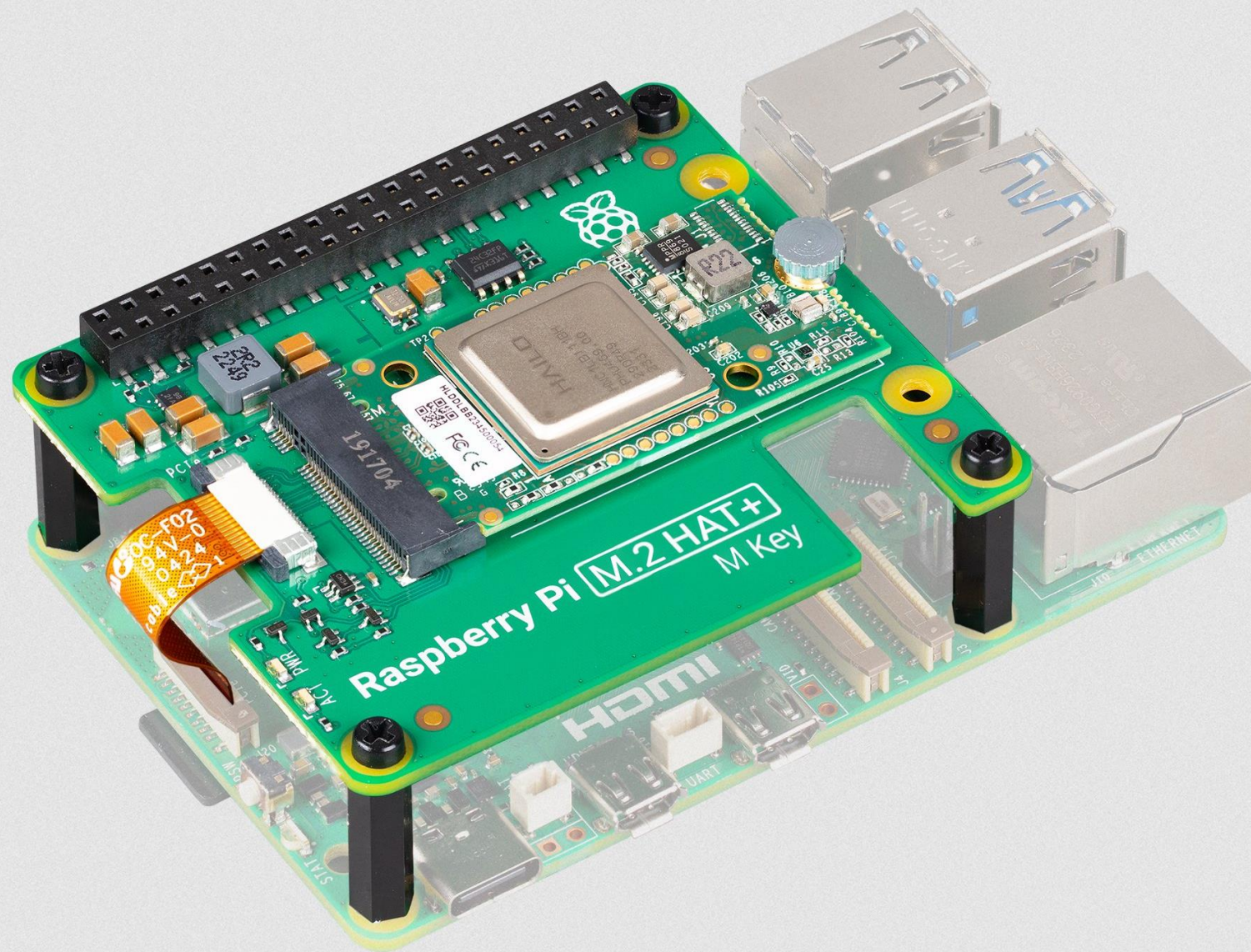
Liquid Architecture





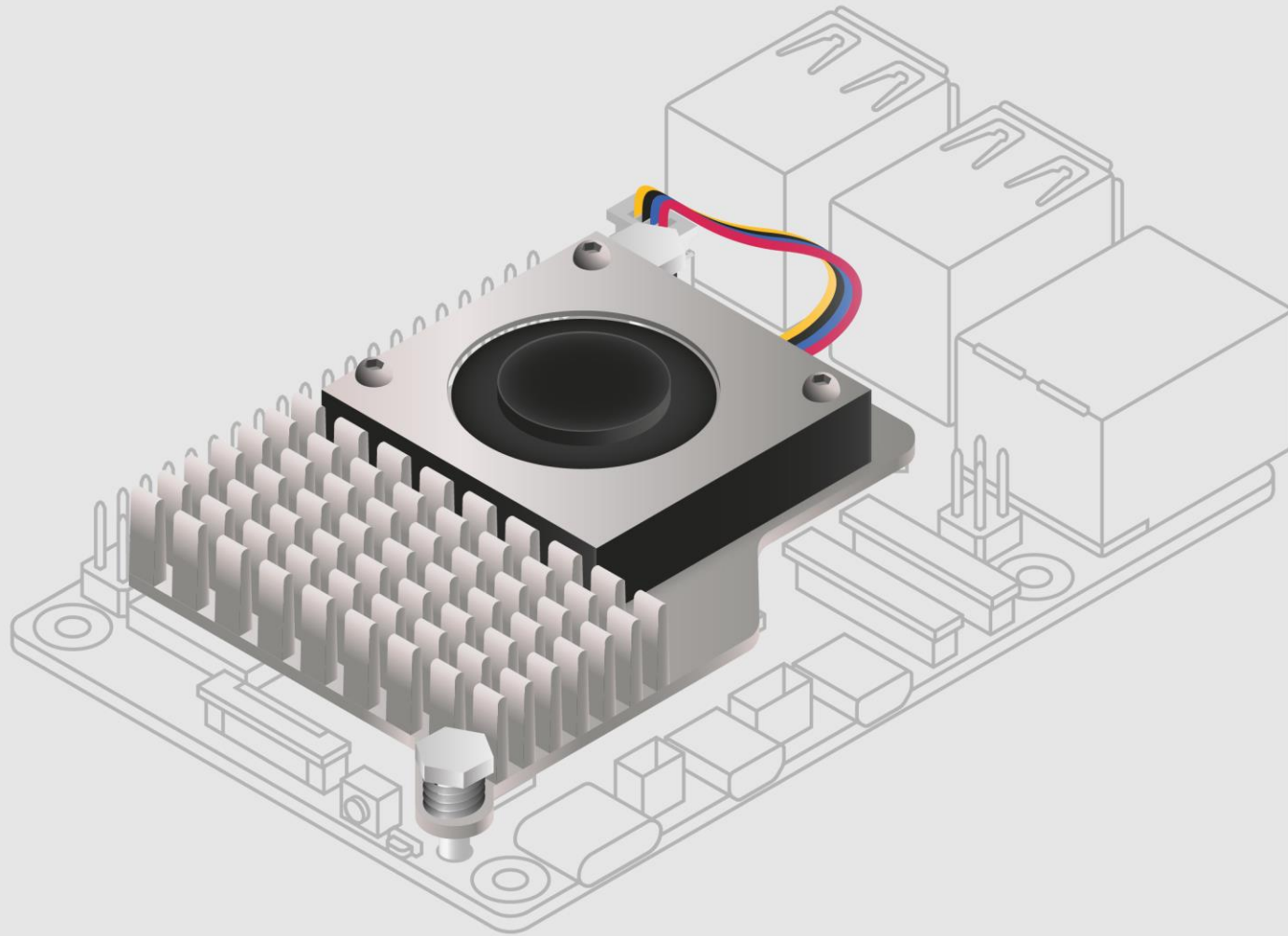
**How can YOU use Edge
Computing?**

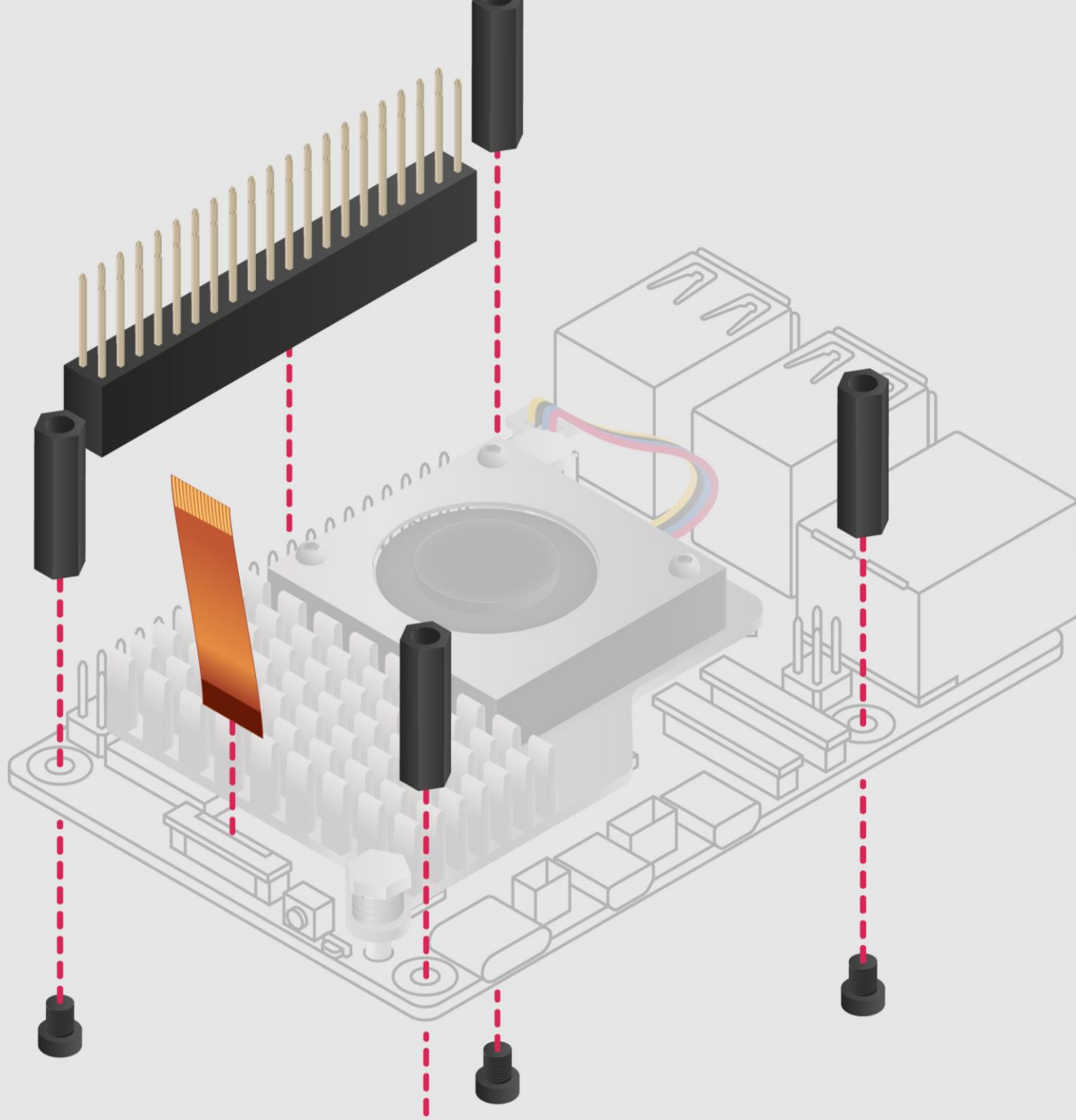
**How can YOU use Edge
Computing?**

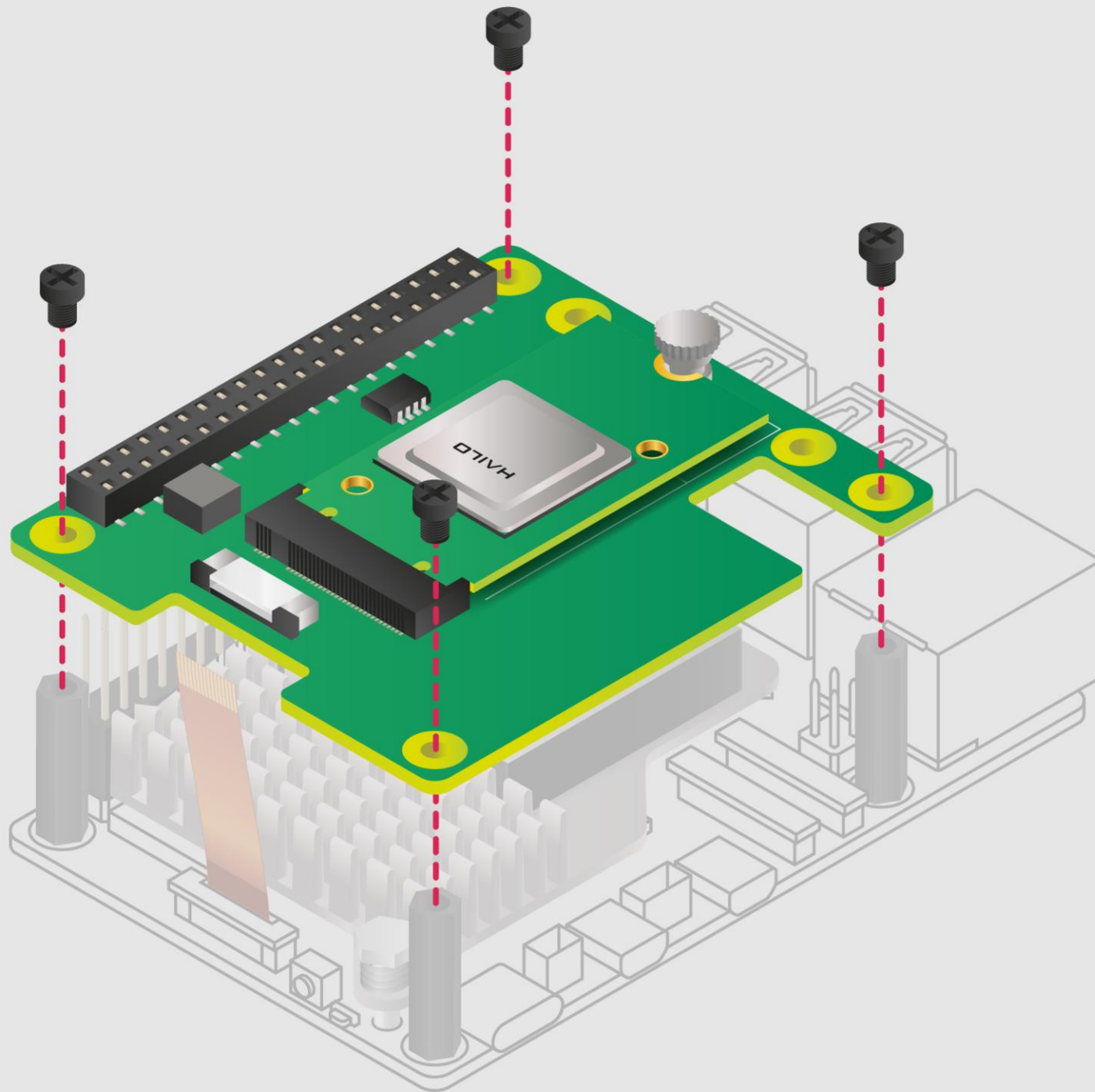


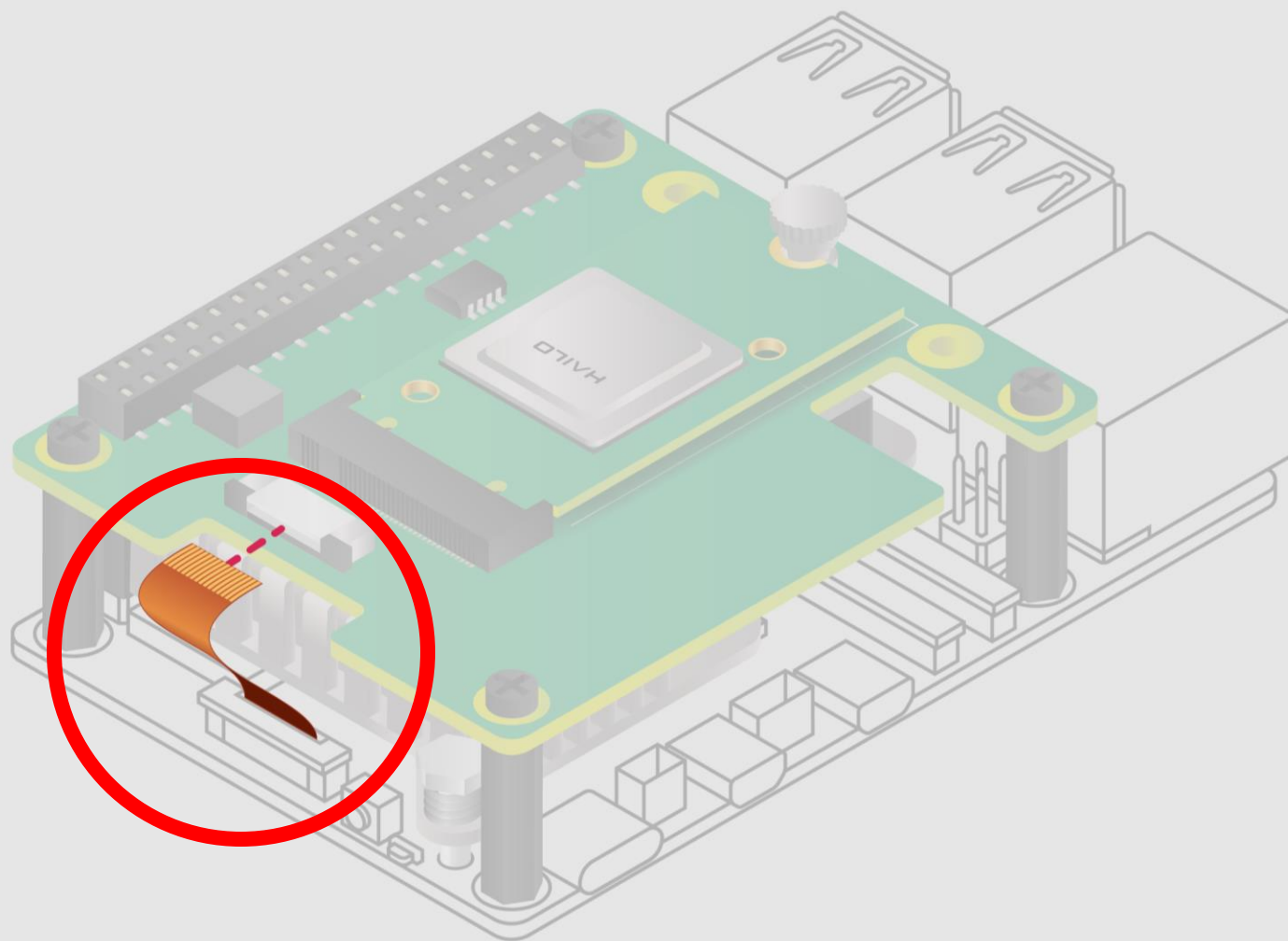
AI Kit for Raspberry Pi!

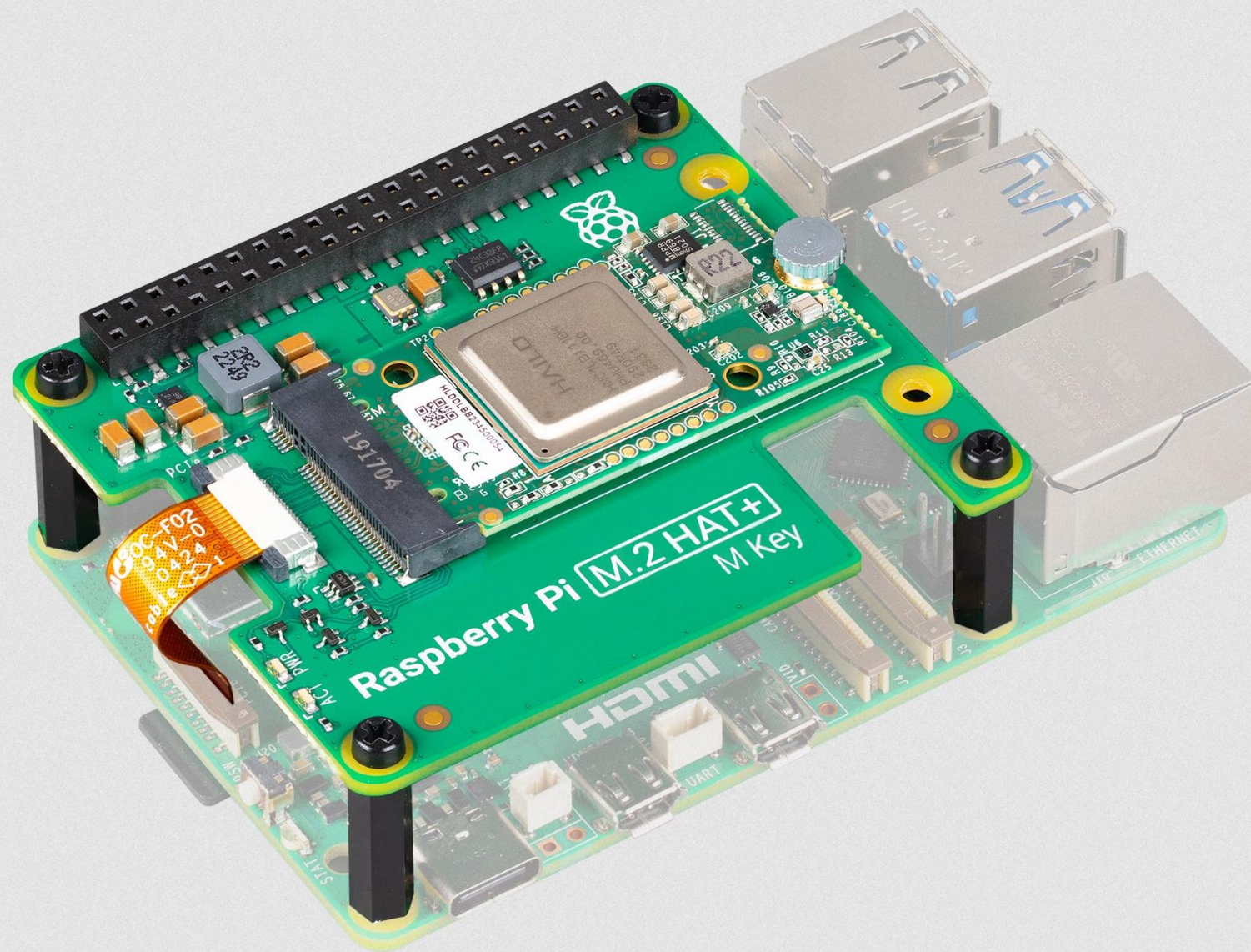
Active cooling is required











```
sudo apt update && sudo apt full-upgrade
```



```
sudo apt update && sudo apt full-upgrade  
sudo rpi-eeprom-update
```

```
sudo apt update && sudo apt full-upgrade  
sudo rpi-eeprom-update  
sudo raspi-config
```

```
sudo apt update && sudo apt full-upgrade  
sudo rpi-eeeprom-update  
sudo raspi-config  
sudo rpi-eeeprom-update -a
```

```
sudo apt update && sudo apt full-upgrade  
sudo rpi-eeprom-update  
sudo raspi-config  
sudo rpi-eeprom-update -a
```

```
sudo reboot
```



```
sudo apt update && sudo apt full-upgrade  
sudo rpi-eeprom-update  
sudo raspi-config  
sudo rpi-eeprom-update -a
```

```
sudo apt install hailo-all  
sudo reboot
```

```
hailortcli fw-control identify
```

```
Executing on device: 0000:01:00.0  
Identifying board  
Control Protocol Version: 2  
Firmware Version: 4.17.0 (release,app,extended context switch buffer)  
Logger Version: 0  
Board Name: Hailo-8  
Device Architecture: HAILO8L  
Serial Number: HLDDLBB234500054  
Part Number: HM21LB1C2LAE  
Product Name: HAILO-8L AI ACC M.2 B+M KEY MODULE EXT TMP
```

VIDEO!