Choose the Right Hardware

Proposal Template

# Scenario 1: Manufacturing

Client Requirements and Potential Hardware Solution

Look through the scenario and find any relevant client requirements. Then, suggest a potential hardware type and explain how this hardware would satisfy each of the requirements.

|  |
| --- |
| **Which hardware might be most appropriate for this scenario?**  **(CPU / IGPU / VPU / FPGA)** |
| *CPU+FPGA* |

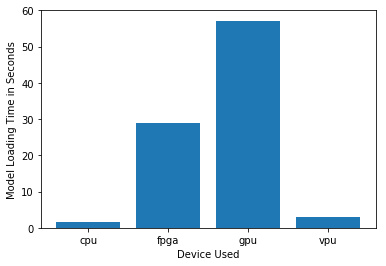
|  |  |
| --- | --- |
| **Requirement Observed**  **(Include at least two.)** | **How does the chosen hardware meet this requirement?** |
| *Example requirement:*  *The client requires a tiny device to be connected to their CPU—and their budget is only about $100 for each device.* | *Example explanation:*  *VPU or NCS2 is only about 27.40 mm in size and would fit in the price range.* |
| To monitor people on each belt, at least 5time per sec. | CPU+FPGA is best fit for this because of monitoring no. of people in “multiple belts” because of performance. And FPGA has comparatively highest fps as per graph 3. |
| Fast inference time to detect flaws in chip packaging before shipment | As per graph 2 FPGA has the lowest possible inference time to resolve this issue. |
| Lifecycle requirement 5-10yers and easily reprogrammable. | FPGA has guaranteed lifecycle of 5-10yesrs, while CPU can also work longer if its TDP controlled as per data sheet. |

## Queue Monitoring Requirements

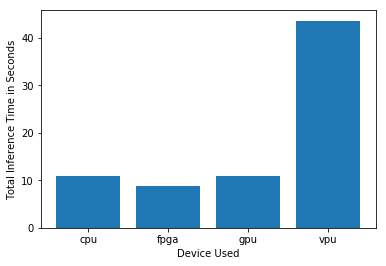
|  |  |
| --- | --- |
| **Maximum number of people in the queue** | 2 or more |
| **Model precision chosen (FP32, FP16, or Int8)** | For detection of people all three precision can be used, but in this case hardware is not restricted so that FP32 would be great. |

## Test Results

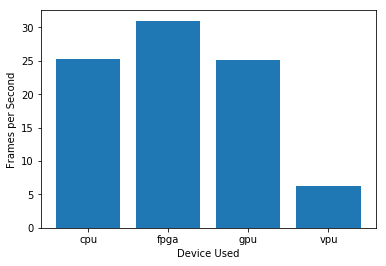
After you've tested your application on all four hardware types (CPU, IGPU, VPU, and FPGA), copy the matplotlib output showing the comparison into the spaces below. You should have three graphs (for model load time, inference time, and FPS).

**

***Model Load Time***

**

***Inference Time***

**

***FPS***

## Final Hardware Recommendation

Now synthesize your points from above and provide a brief write-up describing why the chosen hardware is the best choice for this scenario. Be sure to discuss the client's requirements, the test results, and how these relate to one another (e.g., perhaps one of the devices performed better than the rest, but does not meet one of the client's requirements).

|  |
| --- |
| **Write-up: Final Hardware Recommendation** |
| Mr. Biswas want to monitor people on each belt especially during shift change, and if we consider processing requirement of 5 times per sec. than both ncs2 and cpu would do the job, but for longer life spine and no restriction in budget CPU+FPGA would be great choice, because it can later reprogrammable for further requirements in future without upgrading the Hardwar because of guaranteed life span and performance of FPGA. |

# 

# Scenario 2: Retail

Client Requirements and Potential Hardware Solution

Look through the scenario and find any relevant client requirements. Then, suggest a potential hardware type and explain how this hardware would satisfy each of the requirements.

|  |
| --- |
| **Which hardware might be most appropriate for this scenario?**  **(CPU / IGPU / VPU / FPGA)** |
| *[TODO: Type your answer here]* |

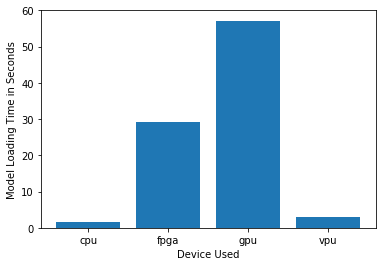
|  |  |
| --- | --- |
| **Requirement Observed**  **(Include at least two.)** | **How does the chosen hardware meet this requirement?** |
| *Example requirement:*  *The client requires a tiny device to be connected to their CPU—and their budget is only about $100 for each device.* | *Example explanation:*  *VPU or NCS2 is only about 27.40 mm in size and would fit in the price range.* |
| *[TODO: Type your answer here]* | *[TODO: Type your answer here]* |
| *[TODO: Type your answer here]* | *[TODO: Type your answer here]* |
| *[TODO: Type your answer here]* | *[TODO: Type your answer here]* |

## Queue Monitoring Requirements

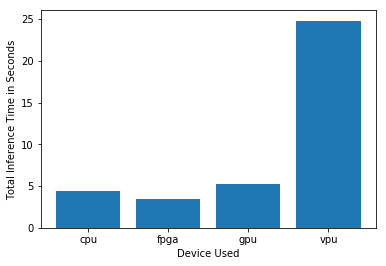
|  |  |
| --- | --- |
| **Maximum number of people in the queue** | *[TODO: Type your answer here]* |
| **Model precision chosen (FP32, FP16, or Int8)** | *[TODO: Type your answer here—choose from ]* |

## Test Results

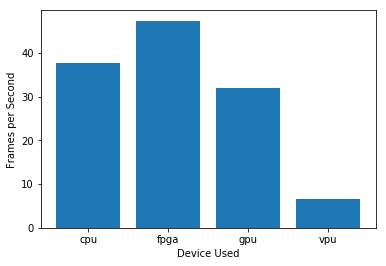
After you've tested your application on all four hardware types (CPU, IGPU, VPU, and FPGA), copy the matplotlib output showing the comparison into the spaces below. You should have three graphs (for model load time, inference time, and FPS).

**

***Model Load Time***

**

***Inference Time***

**

***FPS***

## Final Hardware Recommendation

Now synthesize your points from above and provide a brief write-up describing why the chosen hardware is the best choice for this scenario. Be sure to discuss the client's requirements, the test results, and how these relate to one another (e.g., perhaps one of the devices performed better than the rest, but does not meet one of the client's requirements).

|  |
| --- |
| **Write-up: Final Hardware Recommendation** |
| *[TODO: Type your answer here]* |

# 

# Scenario 3: Transportation

Client Requirements and Potential Hardware Solution

Look through the scenario and find any relevant client requirements. Then, suggest a potential hardware type and explain how this hardware would satisfy each of the requirements.

|  |
| --- |
| **Which hardware might be most appropriate for this scenario?**  **(CPU / IGPU / VPU / FPGA)** |
| *[TODO: Type your answer here]* |

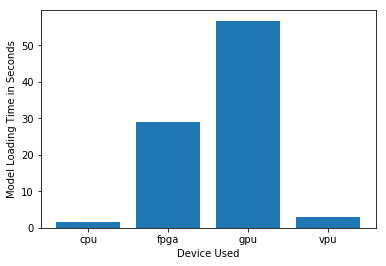
|  |  |
| --- | --- |
| **Requirement Observed**  **(Include at least two.)** | **How does the chosen hardware meet this requirement?** |
| *Example requirement:*  The client requires a tiny device to be connected to their CPU—and their budget is only about $100 for each device. | *Example explanation:*  VPU or NCS2 is only about 27.40 mm in size and would fit in the price range. |
| *[TODO: Type your answer here]* | *[TODO: Type your answer here]* |
| *[TODO: Type your answer here]* | *[TODO: Type your answer here]* |
| *[TODO: Type your answer here]* | *[TODO: Type your answer here]* |

## Queue Monitoring Requirements

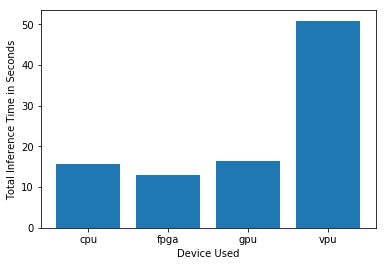
|  |  |
| --- | --- |
| **Maximum number of people in the queue** | *[TODO: Type your answer here]* |
| **Model precision chosen (FP32, FP16, or Int8)** | *[TODO: Type your answer here—choose from ]* |

## Test Results

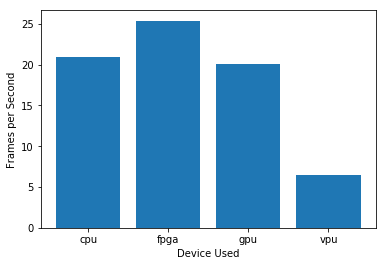
After you've tested your application on all four hardware types (CPU, IGPU, VPU, and FPGA), copy the matplotlib output showing the comparison into the spaces below. You should have three graphs (for model load time, inference time, and FPS).

**

***Model Load Time***

**

***Inference Time***

**

***FPS***

## Final Hardware Recommendation

Now synthesize your points from above and provide a brief write-up describing why the chosen hardware is the best choice for this scenario. Be sure to discuss the client's requirements, the test results, and how these relate to one another (e.g., perhaps one of the devices performed better than the rest, but does not meet one of the client's requirements).

|  |
| --- |
| **Write-up: Final Hardware Recommendation** |
| *[TODO: Type your answer here]* |

# 