|  |  |  |
| --- | --- | --- |
|  | With normalization | Without normalization |
| With filter | **0.9289** | 0.9218 |
| Without filter | 0.9234 | 0.9140 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Delayinference** | **Delayonline training** | **Total SRAM consumption** | **Overall accuracy before/after online training**  **(On Dev Board)** | **Overall accuracy before/after online training**  **(Using PyTorch on PC)** |
| **QVAR** | 70.3 ms | 5.9 ms | 246.9KiB | 0.6885/0.8582 | 0.6979/0.8666 |
| **Ultrasonic** | 34.6 ms | 2.2 ms | 107.1KiB | 0.9301/0.9560 | 0.9232/0.9580 |

\*The Cortex M7 core works at 216MHz

\*Raw data are used in QVAR dataset

›

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ç | **On MCU** | | **On PC using PyTorch** | |
| **Acc before online training** | **Acc after online training** | **Acc before online training** | **Acc after online training** |
| Fold-0 | 0.9667 | 0.9792 | 0.9667 | 0.9688 |
| Fold-1 | 0.9292 | 0.9563 | 0.9250 | 0.9479 |
| Fold-2 | 0.9292 | 0.9438 | 0.9312 | 0.9500 |
| Fold-3 | 0.8792 | 0.9813 | 0.8729 | 0.9521 |
| Fold-4 | 0.8896 | 0.9417 | 0.8583 | 0.9208 |
| Fold-5 | 0.9146 | 0.9542 | 0.9250 | 0.9458 |
| Fold-6 | 0.9833 | 0.9875 | 0.9833 | 0.9854 |
| Mean | 0.9274 | 0.9634 | 0.9232 | 0.9530 |

|  |
| --- |
| 0.9792 / 0.9688 |
| 0.9563 / 0.9479 |
| 0.9438 / 0.9500 |
| 0.9813 / 0.9521 |
| 0.9417 / 0.9208 |
| 0.9542 / 0.9458 |
| 0.9875 / 0.9854 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **On MCU** | | **On PC using PyTorch** | |
| **Acc before online training** | **Acc after online training** | **Acc before online training** | **Acc after online training** |
| Fold-1 | 0.6613 | 0.9516 | 0.7473 | 0.9516 |
| Fold-2 | 0.8171 | 0.9429 | 0.8171 | 0.9257 |
| Fold-3 | 0.5000 | 0.8596 | 0.5506 | 0.8371 |
| Fold-4 | 0.4774 | 0.7419 | 0.4258 | 0.6645 |
| Fold-5 | 0.5057 | 0.7701 | 0.5287 | 0.8333 |
| Fold-6 | 0.6111 | 0.9444 | 0.5889 | 0.9000 |
| Fold-7 | 0.6264 | 0.7931 | 0.7069 | 0.8506 |
| Fold-8 | 0.9333 | 0.9611 | 0.9389 | 0.9667 |
| Fold-9 | 0.8909 | 0.8970 | 0.9030 | 0.9333 |
| Fold-10 | 0.5148 | 0.9053 | 0.5325 | 0.9408 |
| Fold-11 | 0.8652 | 0.9494 | 0.8483 | 0.9101 |
| Fold-12 | 0.8333 | 0.8833 | 0.8944 | 0.9167 |
| Fold-13 | 0.8636 | 0.8750 | 0.8182 | 0.8864 |
| Fold-14 | 0.8229 | 0.8686 | 0.8514 | 0.9314 |
| Fold-15 | 0.8764 | 0.8989 | 0.8989 | 0.9438 |
| Fold-16 | 0.5650 | 0.8531 | 0.5141 | 0.8249 |
| Fold-17 | 0.4545 | 0.5682 | 0.4470 | 0.6212 |
| Fold-18 | 0.4888 | 0.8146 | 0.4944 | 0.8483 |
| Fold-19 | 0.6954 | 0.8161 | 0.6724 | 0.7356 |
| Fold-20 | 0.7670 | 0.8693 | 0.7784 | 0.9091 |
| Mean | 0.6885 | 0.8582 | 0.6979 | 0.8666 |