Compute in Sensor

Sensor Array — ×pixels A2D — Read / Read eDRAM — ×neurons D2A

Cycles: C1 C2 C3 C4

xBAR-1 ... xBAR-n — ×output A2D — //

Layer 1

ReLU in MCU/Digital Circuit — MCU (ReLU) — Wr — eDRAM — ×neurons D2A

C5 Cn

eDRAM Write ×# Layers

Layer 2 ... **Layer m** → **MCU (Sigmoid) [Class]**

(I)

eDRAM — Multiple Rd/Wr — Inst/Data Cache — MCU DSP (MAcc) → MCU (ReLu/Sigmoid)

(II)

eDRAM — Multiple Rd/Wr — Inst/Data Cache — MCU DSP (MAcc) → MCU (ReLu/Sigmoid) — MCU Accelerator (vector/conv)

(III)