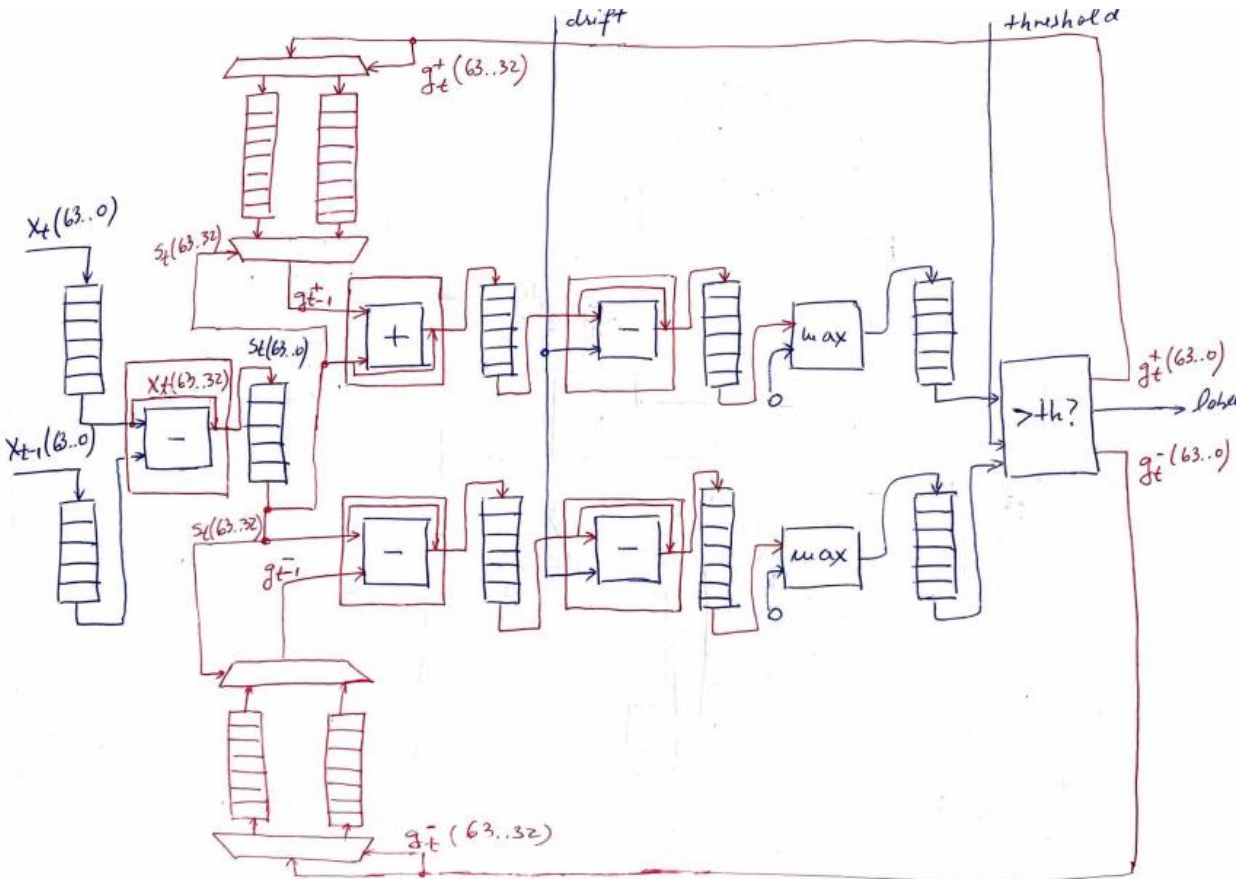# Multiple Streams CUSUM Anomaly Detector

First design (2 streams = 2 sensors): sensor id goes through all the processing components, together with the measurement value

Implementation status:

- **Implemented:** components for **+/−**, **max** and **decision comparator (> th ?)** which work on 64-bit data (63..32 is the sensor id, 31..0 is the actual measurement)
- **Not (yet) implemented:** multiplexing/demultiplexing mechanism which makes decisions based on the sensor id
- **Next (first) step:** initialization phase (transform **is_first** signal into an array **is_first[# of sensors − 1..0]** and implement the initialization phase based on the current sensor id)

IP Cores:

- **axis_broadcaster_0** (AXI4-Stream Broadcaster)
- **axis_combiner_0** (AXI4-Stream Combiner)

- **fifo32x16** (AXI4-Stream Data FIFO)
- **fifo64x16** (AXI4-Stream Data FIFO)
- **fp_adder_subtracter** (Floating-point)
- **fp_greater_than** (Floating-point)