Data: w : window length for Moving Median
$i = 0$;
movingMedian = new MovingMedian(winLen = w);
tDigest = new TDigest();
while *stream* **do**
    $i = i + 1$;
    X_i = fetch_from_stream();
    movingMedian.push(X_i);
    $X_{predict}$ = movingMedian.getMedian();
    residual = $X_i - X_{predict}$;
    tDigest.push(residual);
    if $i < 30$ **then**
        anomaly_score = 0;
    else
        M_d = tDigest.getQuantile(0.5);
        IQR = tDigest.getQuantile(0.75) - tDigest.getQuantile(0.25);
        $\mu = M_d$;
        $\sigma = 0.74 * IQR$;
        $p_{value} = 1 - erf(\frac{|residual - \mu|}{2\sigma^2})$;
        anomaly_score = $-\log(p_{value})$;
    end
end

Algorithm 1: Streaming Time-series Anomaly Detection algorithm