Technical Report and Additional Materials for *SHE: A Generic Framework for Data Stream Mining over Sliding Windows*

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Here, we briefly introduce the content of this technical report. In **Appendix ??**, we explain the constraints for hardware implementation (including the reason why SWAMP cannot be deployed on hardware platforms). In **Appendix ??**, we conduct a series of rigorous mathematical analysis of SHE. In **Appendix ??**, we added the detailed parameter settings of several comparison algorithms mentioned at the end of Sec. 6.1 of the original paper. In **Appendix ??**, we show the experiments on the impact of the parameters of SHE. Important notations used in the original paper and technical report are demonstrated in Table 1.

Table 1: Notations frequently used in the original paper/technical report.

Notation	**Meaning**
t_{cur}	current time
N	size of a sliding window
M	number of cells in a data structure
T_{cycle}	time of a cleaning cycle
α	a constant parameter, $\alpha = \frac{T_{cycle}-N}{N}$
G	number of groups
w	number of cells in a group, $w = \frac{M}{G}$
d_{gid}	the time offset of the gid-th group, $d_{gid} = -\lfloor \frac{T_{cycle} \cdot gid}{G} \rfloor$
$m[gid]$	the time mark of the gid-th group