

## < KILL vs. CHECKPOINT>

: Similar to our evaluation setting on Figure 12, here we show the effect of (static vs. dynamic) preemption mechanisms on (a) ANTT, (b) Fairness, and (c) STP – but evaluating KILL alongside CHECKPOINT. Under the static KILL preemption mechanism, the scheduler always terminate (without checkpointing any execution context, hence the preempted task must re-execute from start when re-scheduled) the currently executing task whereas dynamic KILL preemption chooses between KILL vs. DRAIN by comparing the relative throughput degradation per Algorithm 3.

Note from the above results that, while KILL does improve ANTT and fairness in some cases (especially when combined with PREMA), KILL almost always performs poorly than CHECKPOINT in all ANTT/STP/Fairness metrics. As discussed in Section 4.5 (and footnote 4), this is somewhat expected as KILL doesn't show noticeable advantage then CHECKPOINT in terms of ANTT while significantly harming STP. The benefits of KILL comes from its ability to immediate react to preemption requests hence has potential to improve NTT for the "preempting" task. However, the "preempted" task must start from scratch once re-executed later, hence the task that was preempted with KILL always suffer from worse NTT with aggravated STP.

## Overall, CHECKPOINT achieves 87%/24%/77% improvement in average ANTT/STP/Fairness compared to KILL.

While we weren't able to discuss these results in the submitted version (due to space limitations), given the interest from the reviewers, we will include these quantitative results in the final manuscript.