

Analyze Toolwindow Usage Data – Two strategies + Winsorizing

Cleaning: keep CLOSE; keep OPEN only with $\text{open_type} \in \{\text{manual, auto}\}$; sort by $\text{user_id, timestamp}$.

A) implicit_close: second OPEN closes current episode at its time, then new episode starts; censored excluded.

B) skip_double_open: second OPEN while open is ignored; censored excluded.

Orphan CLOSE ignored; non-positive durations dropped.

A) meta: {'orphan_closes': 16, 'implicit_closes': 209, 'skipped_doubleOpens': 0, 'right_censored': 34}

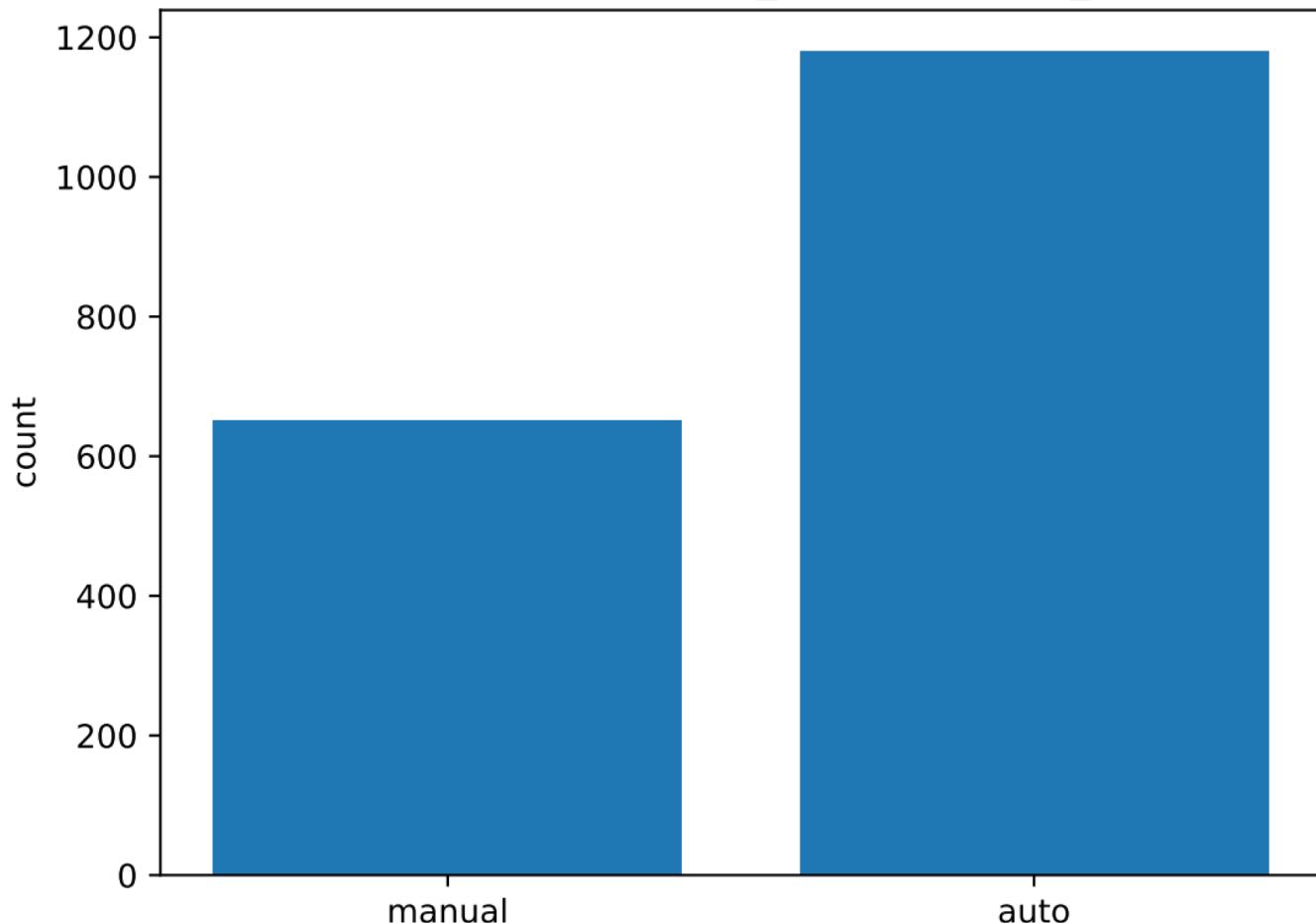
B) meta: {'orphan_closes': 16, 'implicit_closes': 0, 'skipped_doubleOpens': 209, 'right_censored': 34}

implicit_close - per open_type
manual: n=651, median=14.00s, mean=4640.45s, p75=161.99s, p95=6379.99s, p99=154088.55s, max=447314.55s, winsor_mean(p1-p99)=3374.34s
auto: n=1180, median=285.42s, mean=17464.65s, p75=2382.60s, p95=92001.16s, p99=306608.13s, max=728695.21s, winsor_mean(p1-p99)=15889.57s

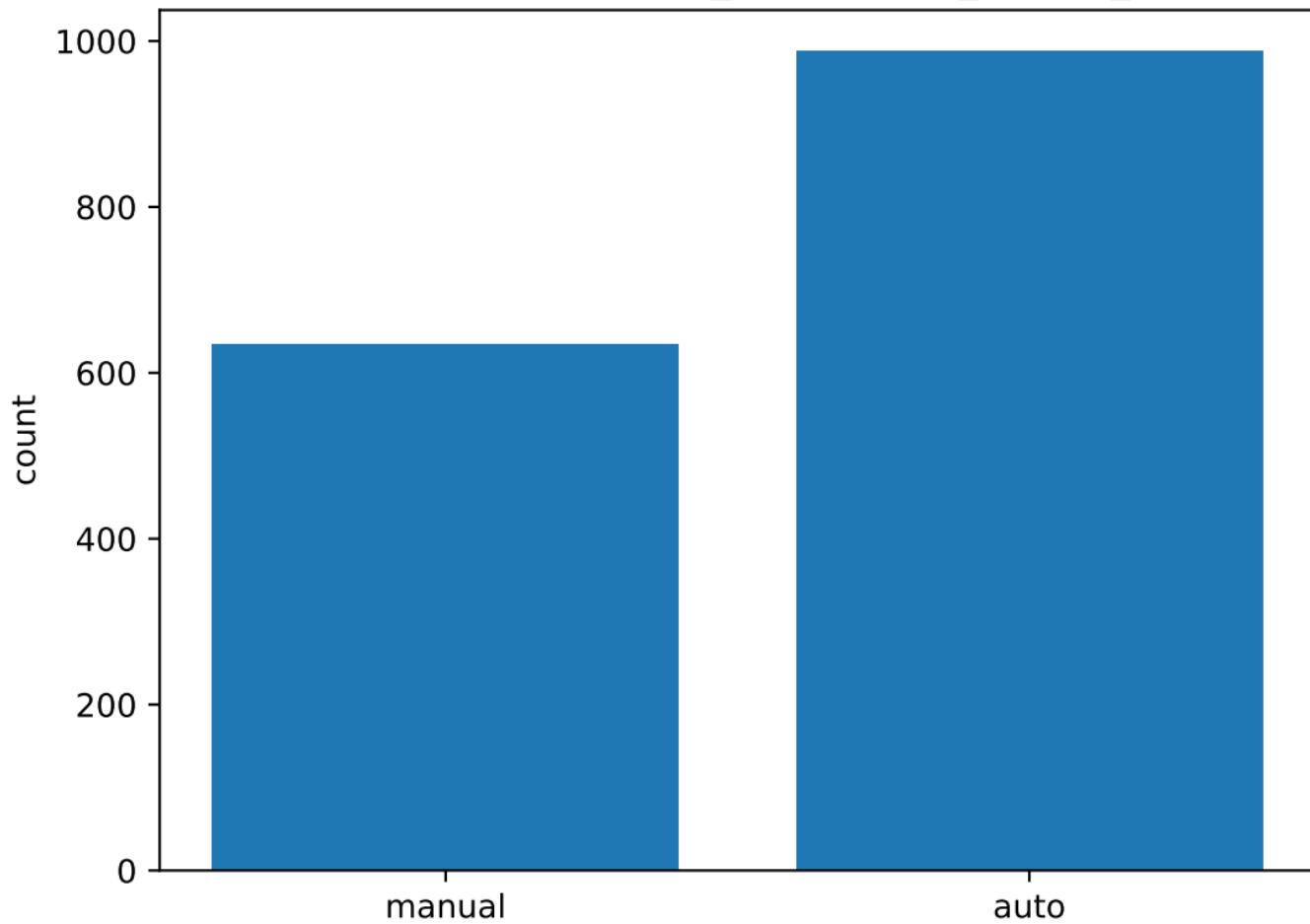
skip_double_open – per open_type

manual: n=634, median=14.02s, mean=5422.73s, p75=168.58s, p95=6980.01s, p99=170880.86s, max=447349.08s, winsor_mean(p1–p99)=3827.70s
auto: n=988, median=216.67s, mean=15555.94s, p75=1499.43s, p95=76913.73s, p99=347198.97s, max=896588.15s, winsor_mean(p1–p99)=13218.91s

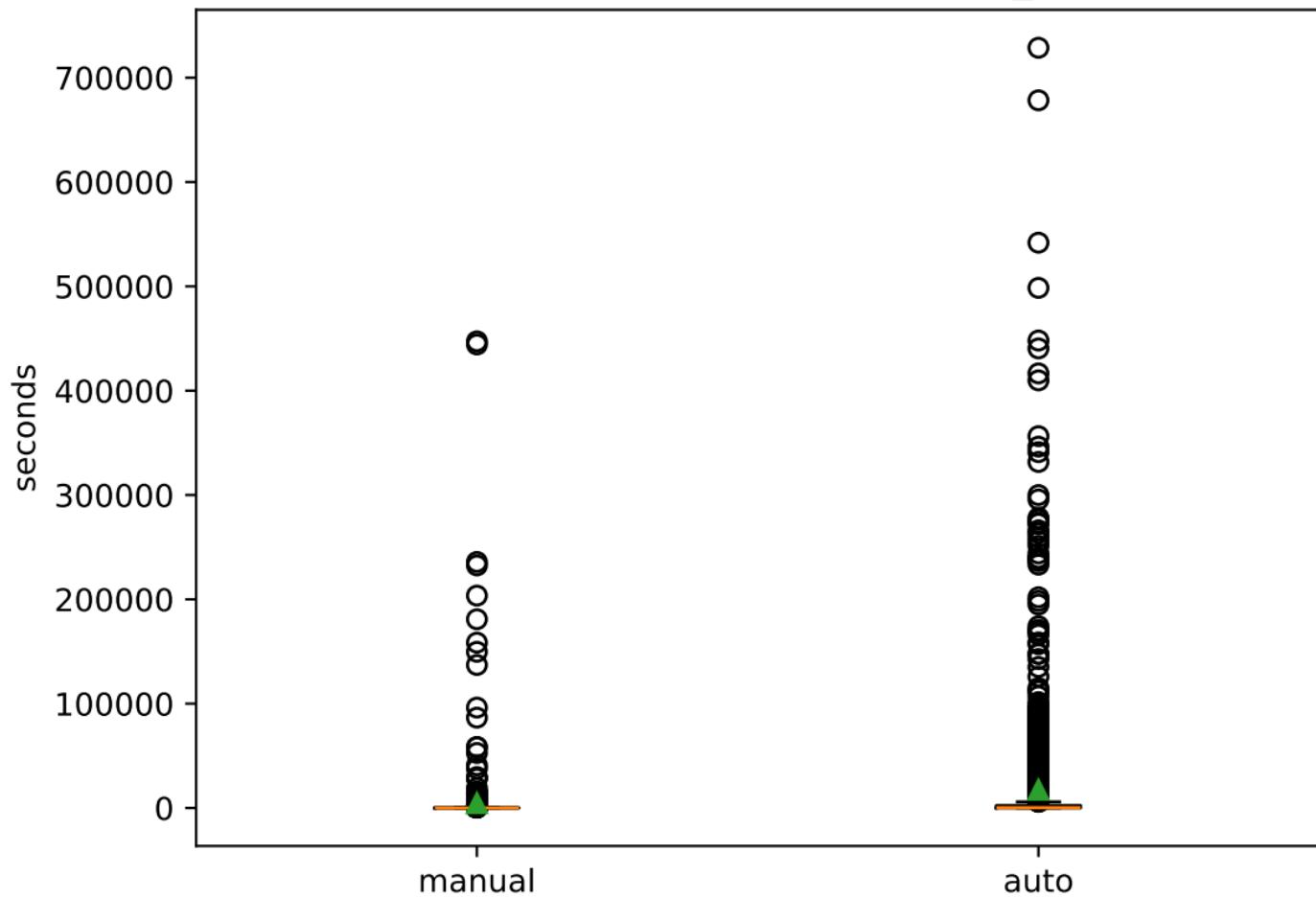
Episodes count by open_type — implicit_close



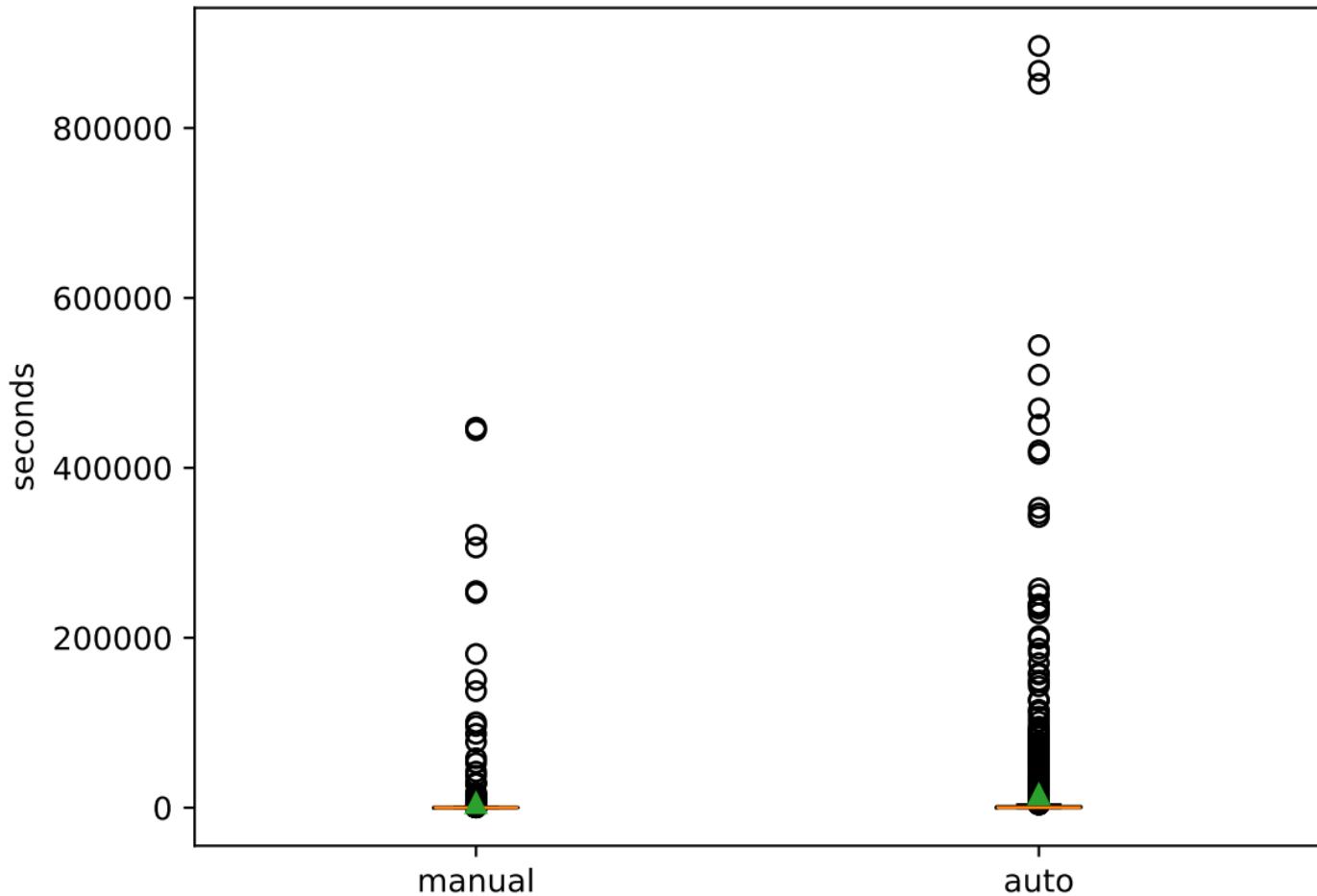
Episodes count by open_type — skip_double_open



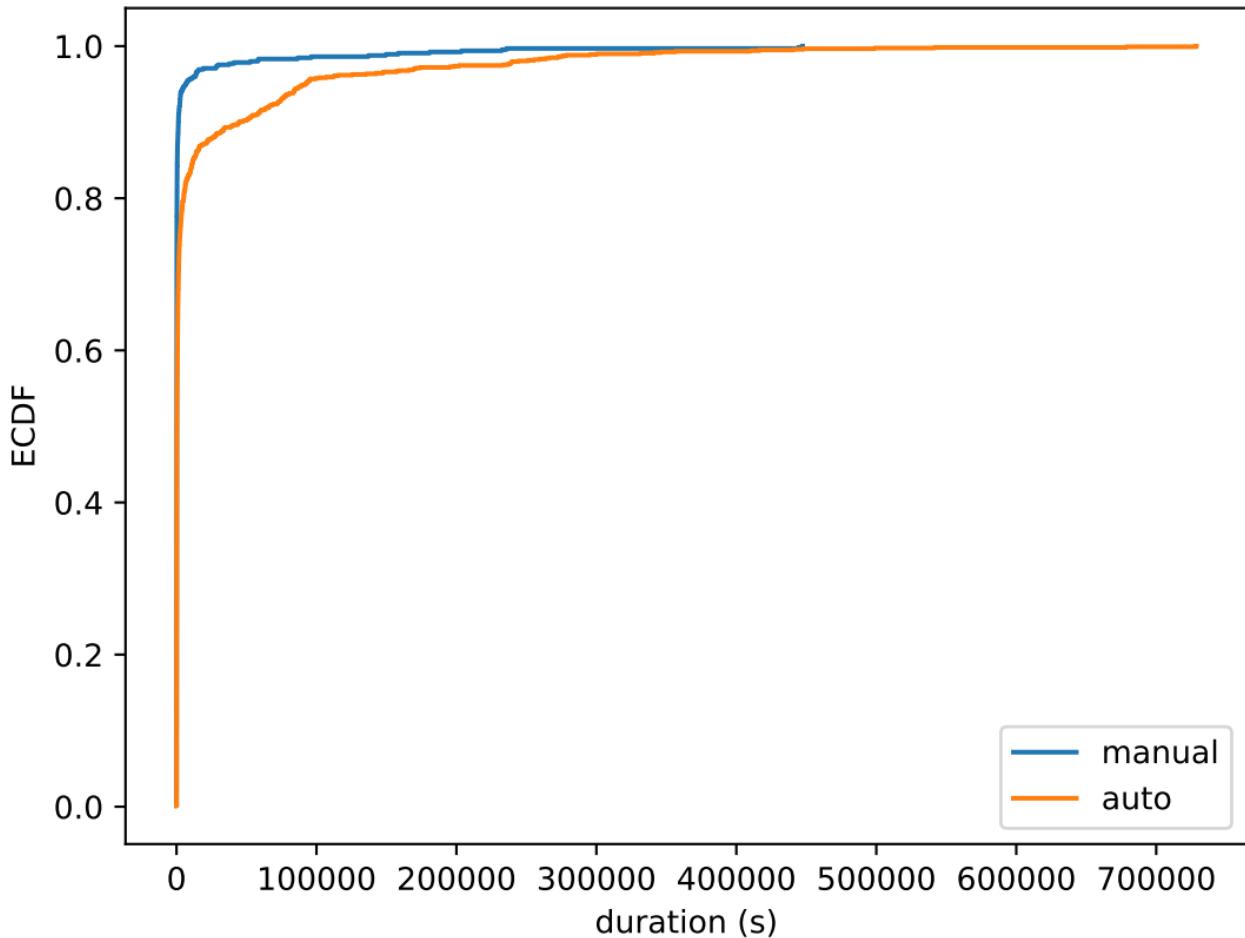
Duration (s) — boxplot — implicit_close



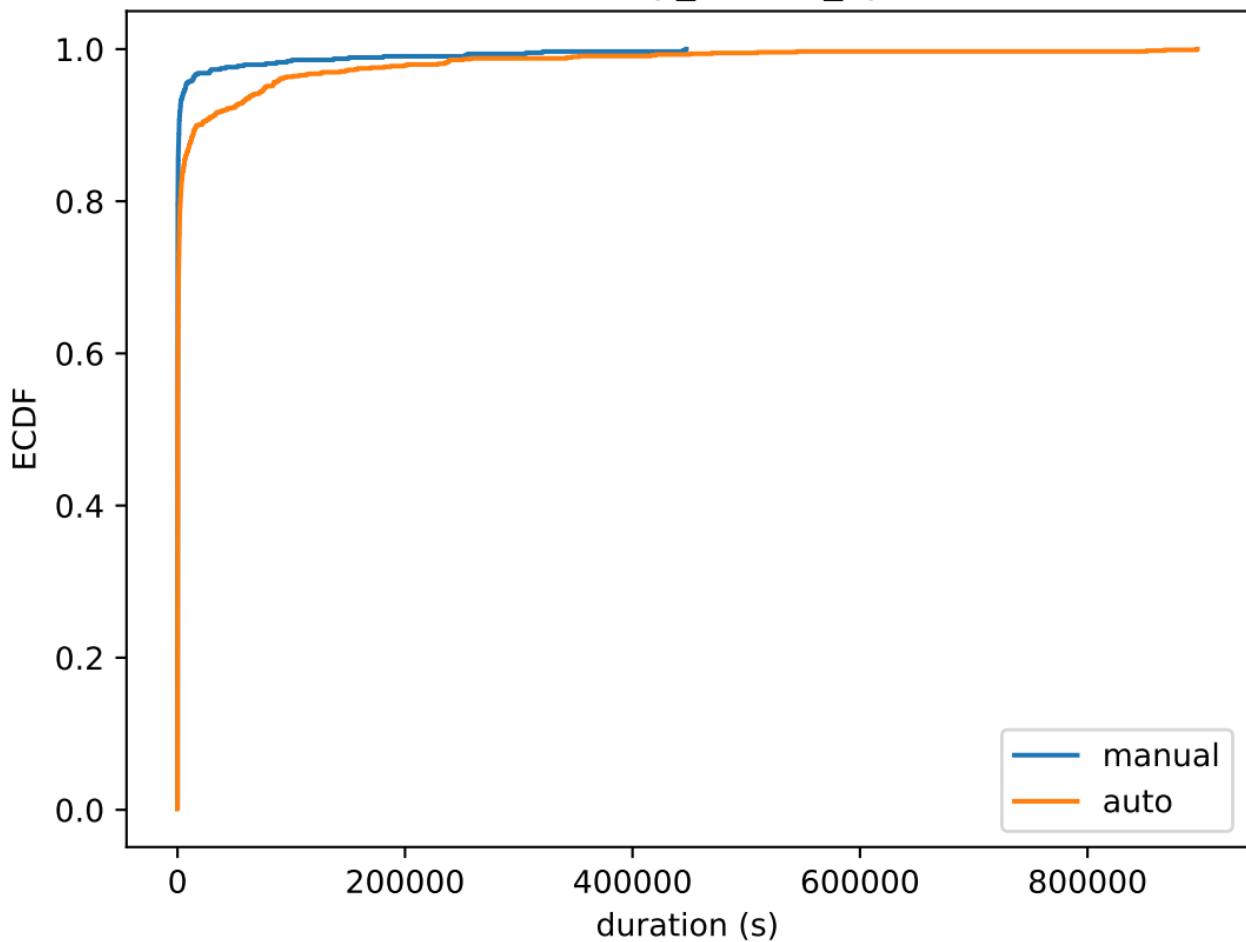
Duration (s) — boxplot — skip_double_open



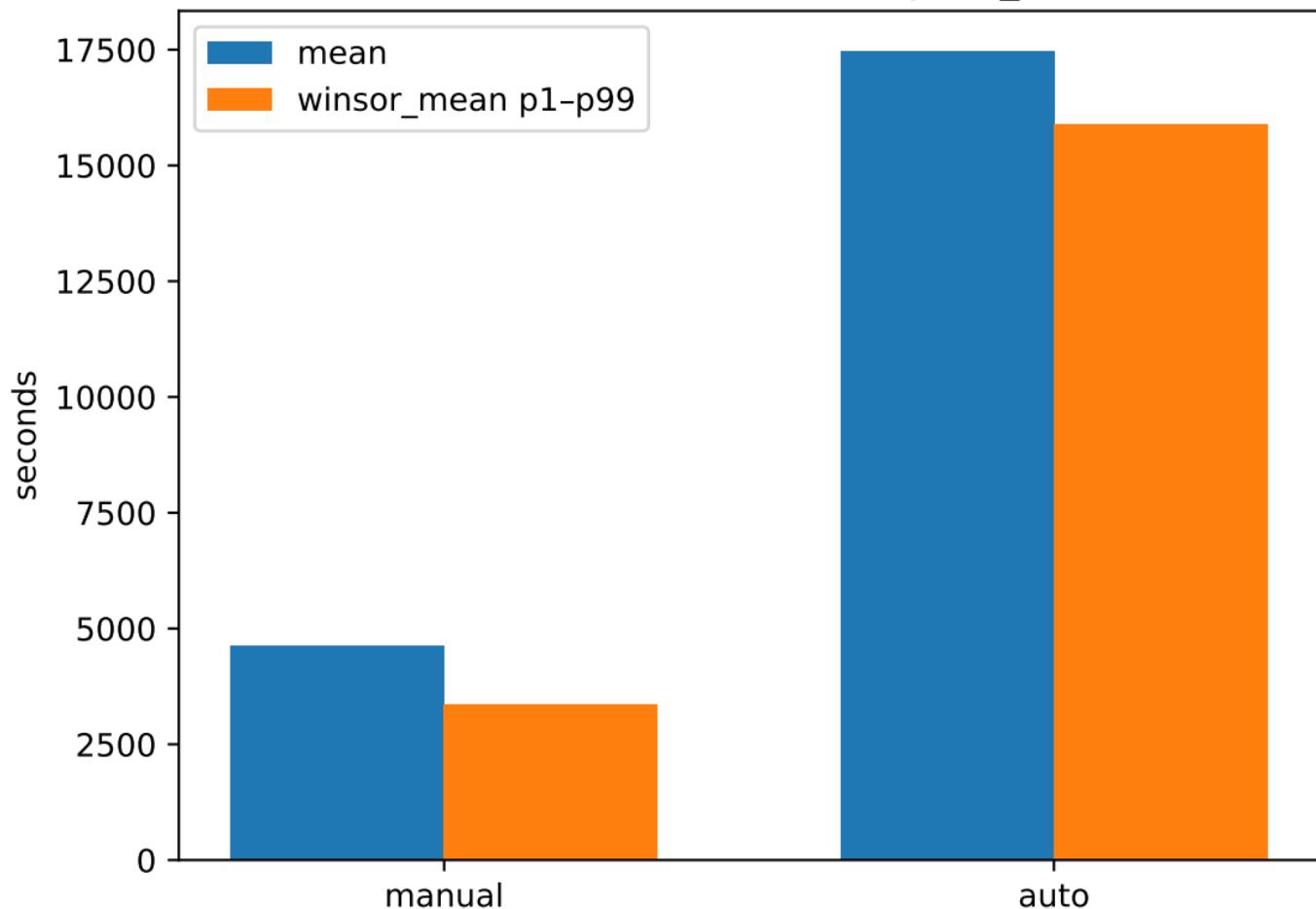
ECDF — implicit_close



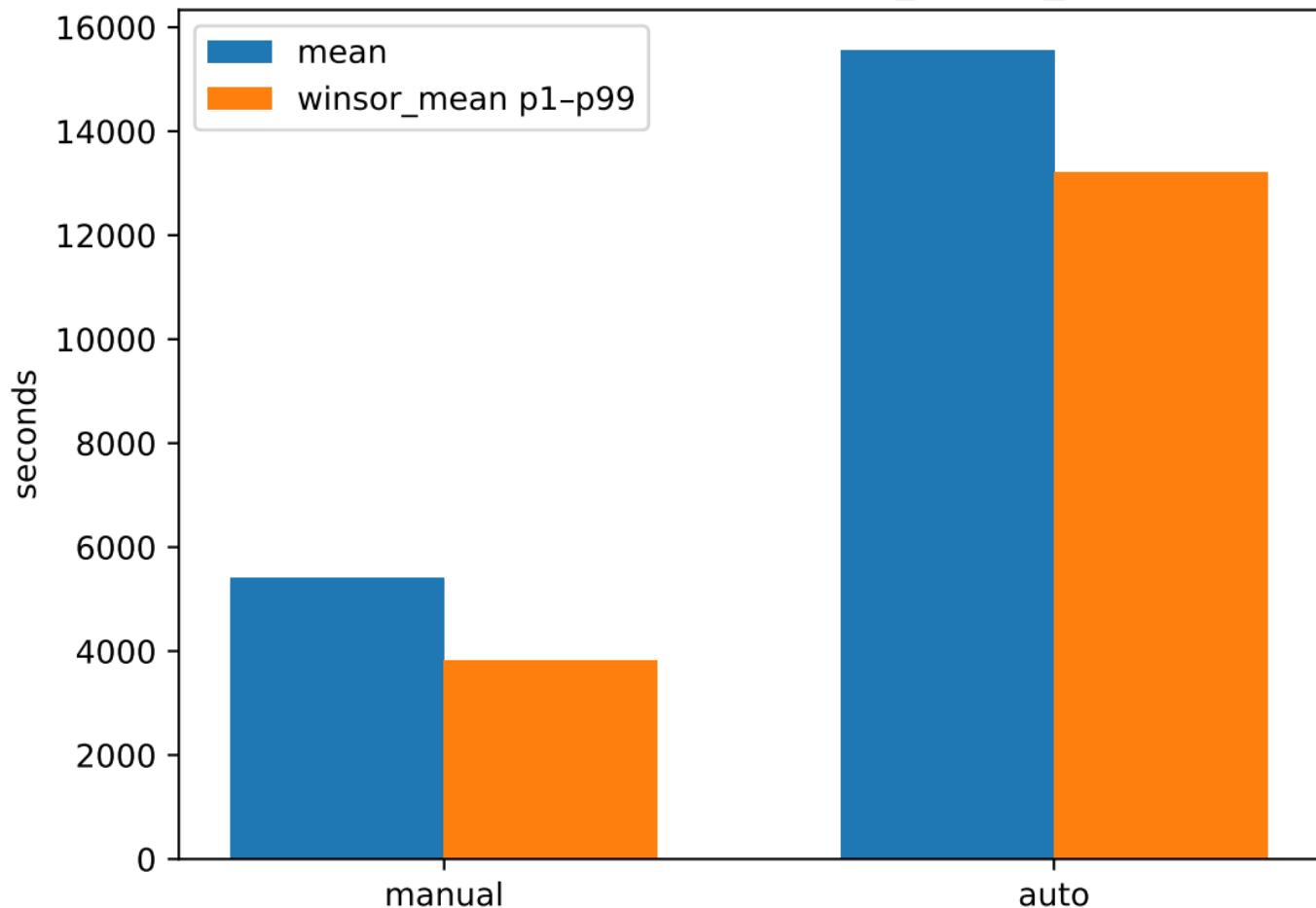
ECDF — skip_double_open



Mean vs winsor-mean — implicit_close



Mean vs winsor-mean — skip_double_open



Permutation test for difference in means (manual - auto)
implicit_close: diff=-12824.20s, p=0.0003
skip_double_open: diff=-10133.21s, p=0.0007