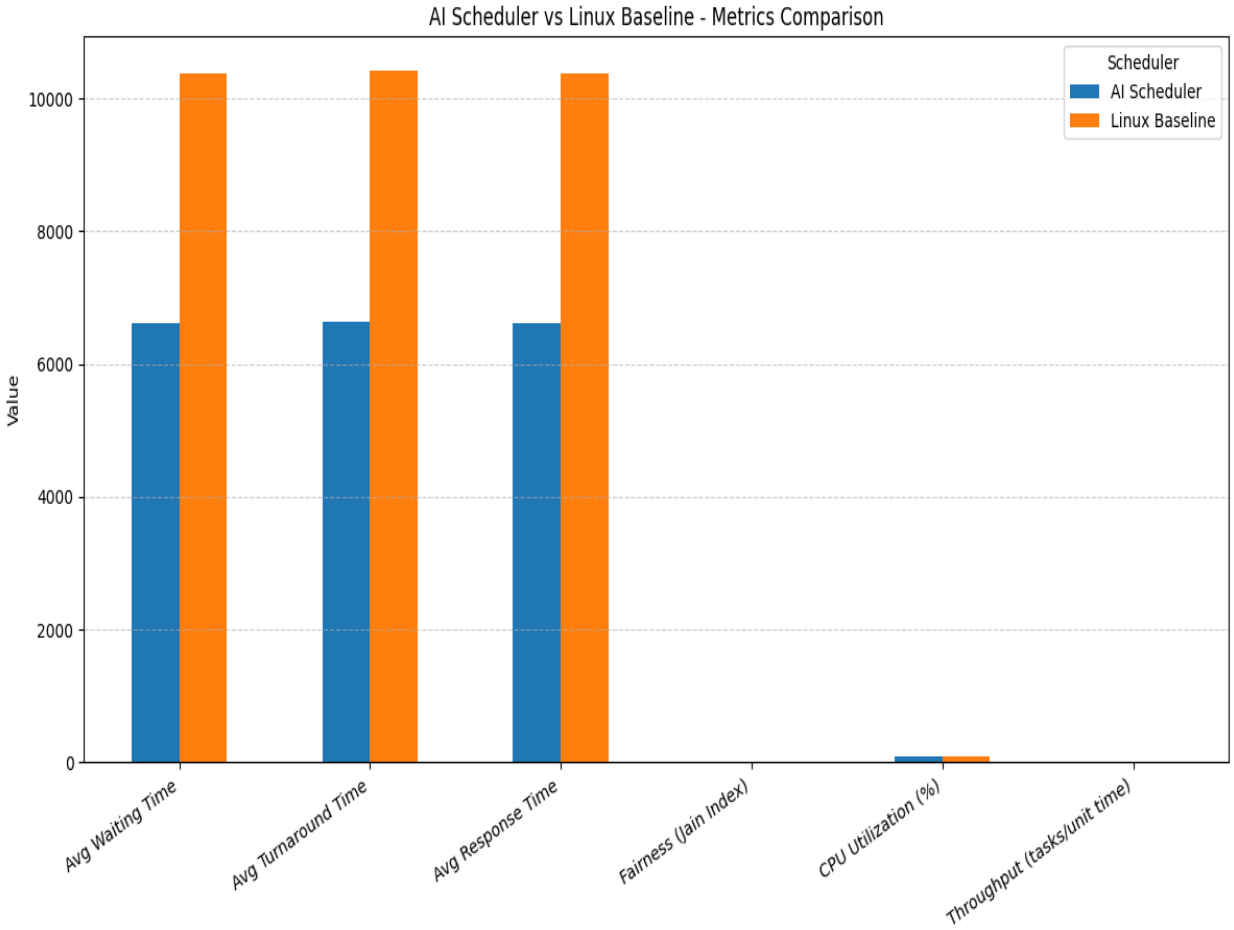
REAL TIME WORKLOAD

Aggregate metrics comparison of AI-augmented Linux-like baseline scheduler and the Linux-like baseline scheduler:

Metric	**Linux-like Baseline Scheduler**	**AI-augmented Linux-like Scheduler**
Simulated Ticks	20,579	20,575
Average Turnaround Time	**10,412.89**	**6,640.26**
Median Turnaround Time	**10,858.00**	**2,051.00**
Average Response Time	**10,384.11**	**6,610.78**
95th Percentile Response	17,107.60	17,110.60
Fairness (Jain Index)	0.043008	0.043008
CPU Utilization (%)	91.06	91.08
Context Switches	**64,943**	**64,084**
Tasks Total	929	929
Tasks Completed	929	929
Throughput (tasks/unit time)	0.045141	0.045150

PLOT:



Results Summary —

For a real-time workload of 929 tasks, the AI-augmented scheduler showed major responsiveness gains:

- **Average Turnaround Time reduced by 36% (10,413 → 6,640 ticks).**
- **Average Response Time improved by 36% (10,384 → 6,611 ticks).**
- **Median Turnaround Time dropped by 81% (10,858 → 2,051 ticks), showing dramatic acceleration for the majority of latency-sensitive tasks.**
- 95th percentile response remained nearly identical, ensuring worst-case deadlines were not compromised.

- Fairness Index unchanged, while CPU utilization slightly improved (91.06% → 91.08%).
- **Context switches reduced by ~1.3%, indicating lower scheduling overhead.**

Interpretation: For time-critical workloads, AVIOS significantly boosts responsiveness and predictability, aligning well with real-time requirements.