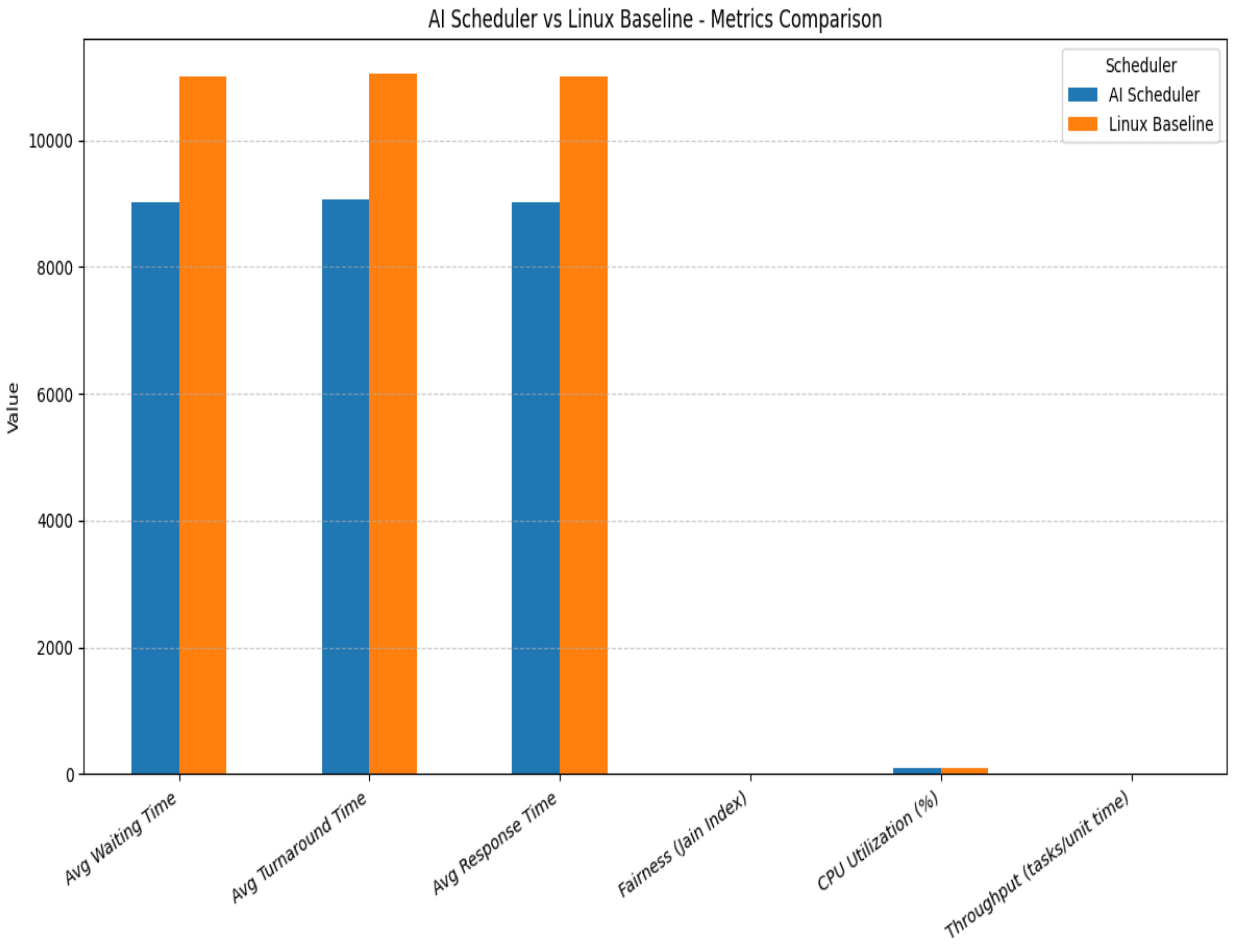
CPU WORKLOAD

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	29,586	29,585
Average Turnaround Time	**11,044.21**	**9,069.18**
Median Turnaround Time	**7,826.00**	**7,763.50**
Average Response Time	**11,002.10**	**9,027.00**
95th Percentile Response	24,999.90	24,999.00
Fairness (Jain Index)	0.018506	0.018506
CPU Utilization (%)	99.93	99.93
Context Switches	**105,635**	**105,325**
Tasks Total	942	942
Tasks Completed	942	942
Throughput (tasks/unit time)	0.031838	0.031839

PLOT:



Results Summary —

On a CPU-intensive workload with 942 tasks, the AI-augmented Linux-like scheduler achieved a clear improvement over the baseline:

- **Average Turnaround Time reduced by 17.9%** (from 11,044 → 9,069 ticks).
- **Average Response Time reduced by 17.9%** (from 11,002 → 9,027 ticks).
- **Median Turnaround Time also showed a slight gain (0.8% lower).**
- Fairness, CPU utilization, and throughput remained identical, confirming no trade-off in overall system balance.

- **Context switches dropped slightly (~0.3%), showing reduced scheduling overhead.**

Interpretation: For compute-heavy tasks, AVIOS significantly improves responsiveness and completion times without compromising fairness or efficiency, demonstrating its ability to allocate CPU cycles more intelligently than the baseline.