

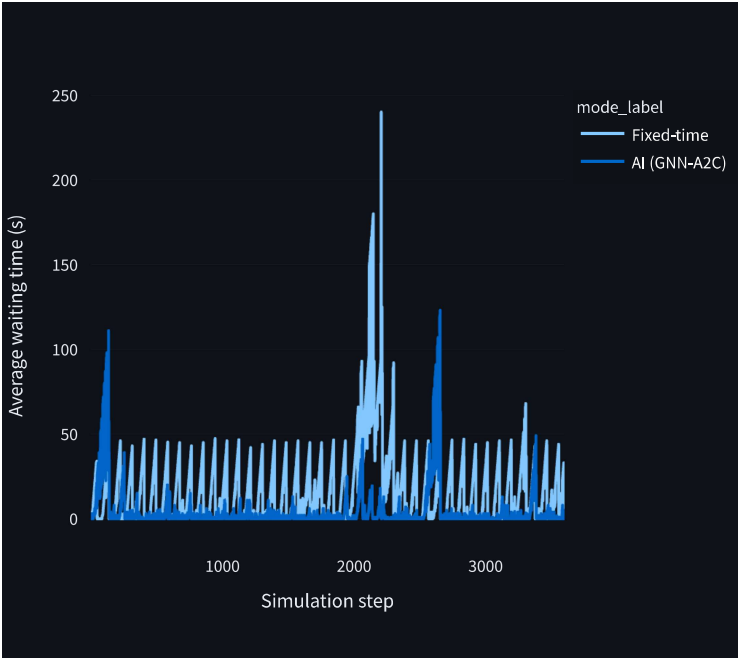
AI-Powered Urban Traffic Optimization – Evaluation Dashboard

This dashboard compares **Fixed-time** vs **AI (GNN-A2C)** traffic signal control on your SUMO network. All metrics are collected live from the simulation via TraCI.

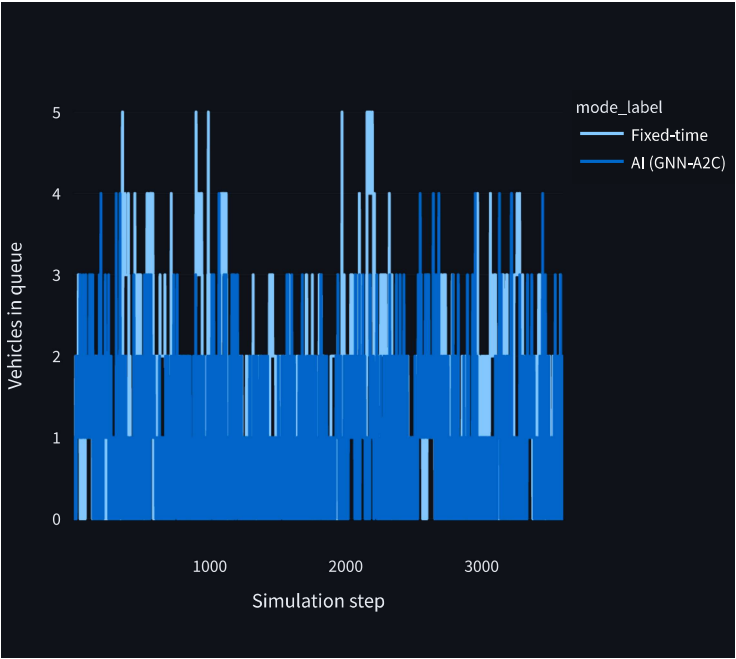
Simulation(s) completed.

Global Episode Metrics

Average waiting time over time



Total queue length over time (vehicles in queue)



Vehicles processed over time

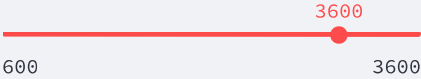


Reward trend over time



Simulation Settings

Simulation steps

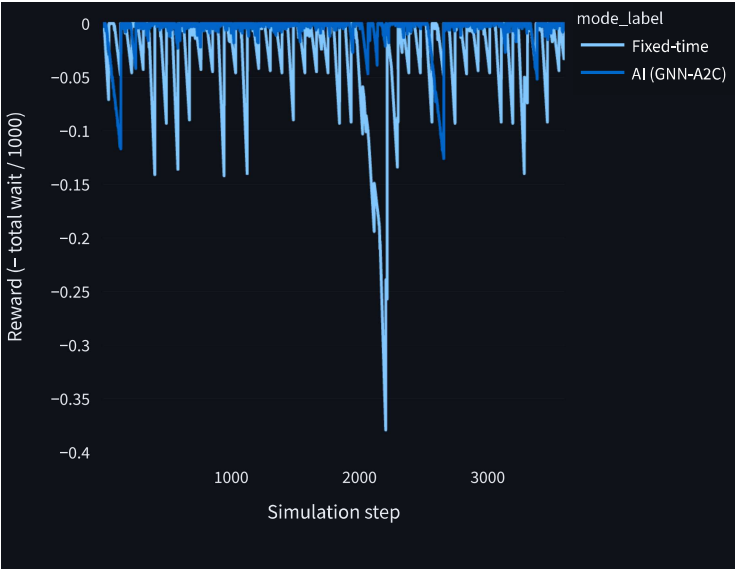
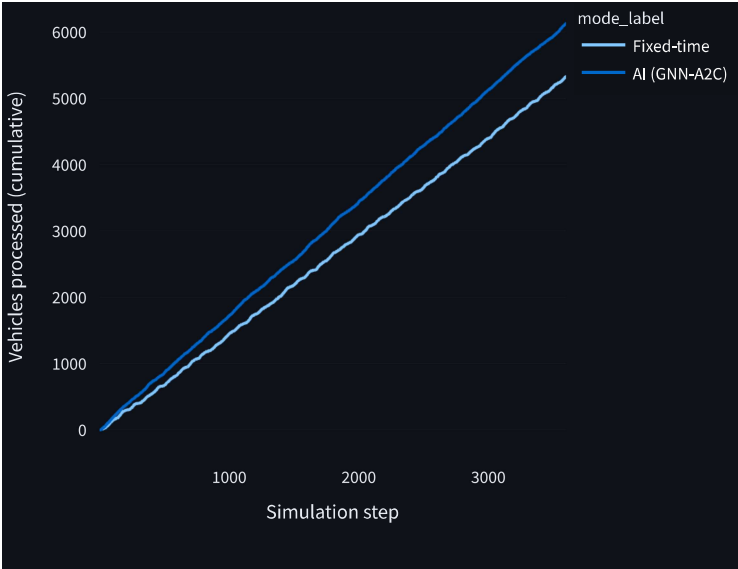


☒ Run Fixed-time baseline

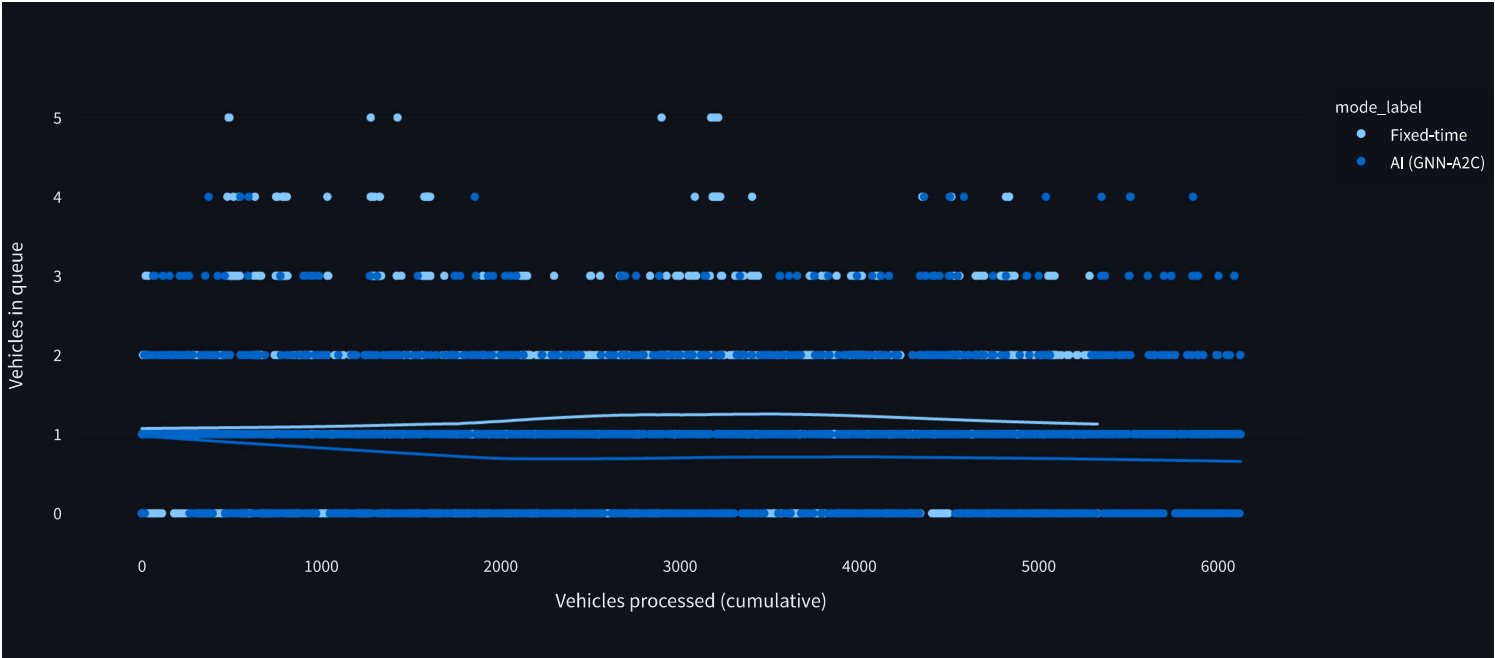
☒ Run AI (GNN-A2C)

Run simulations

Longer episodes give smoother trends but take more time.



Queue vs Processed Vehicles



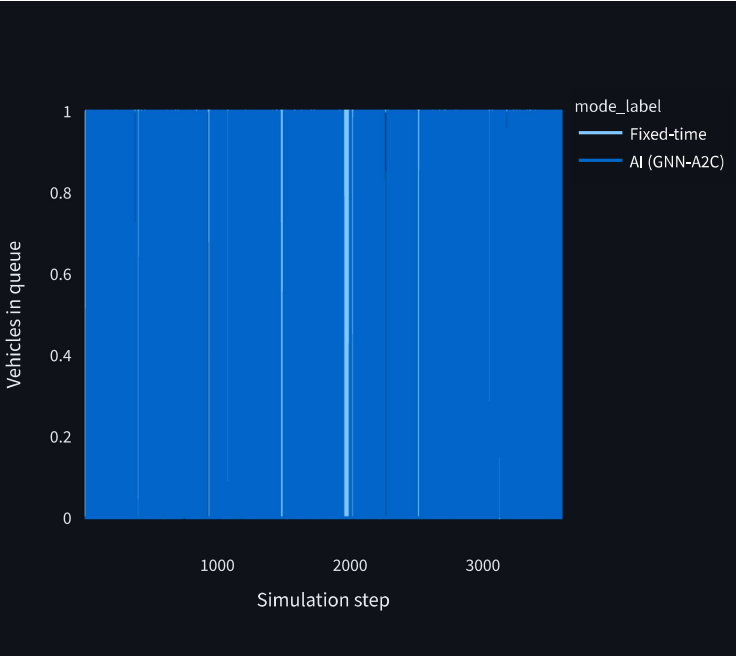
Intersection-level Performance (per TLS)

Select traffic light signal (TLS):

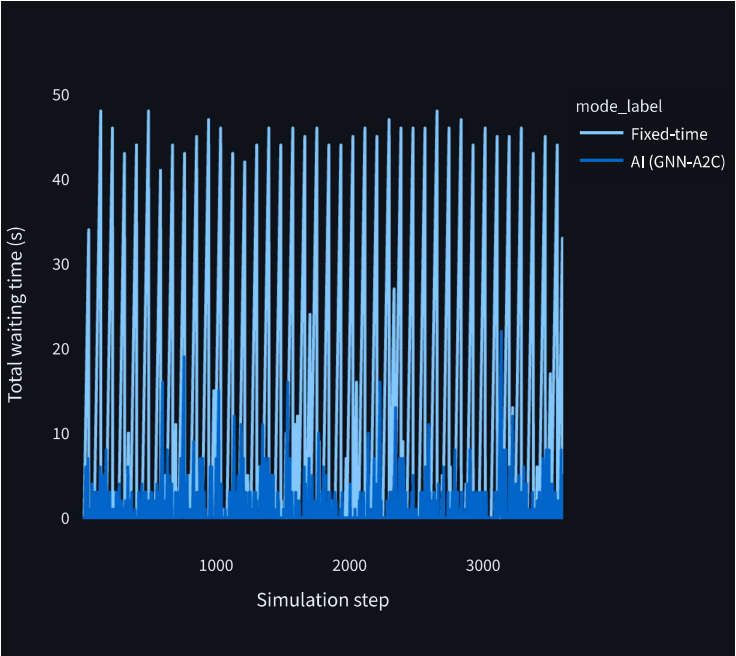
1234828897

▼

Queue length over time – 1234828897

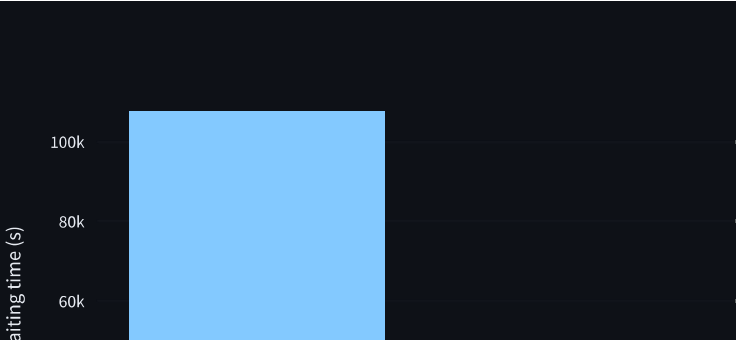


Waiting time over time – 1234828897

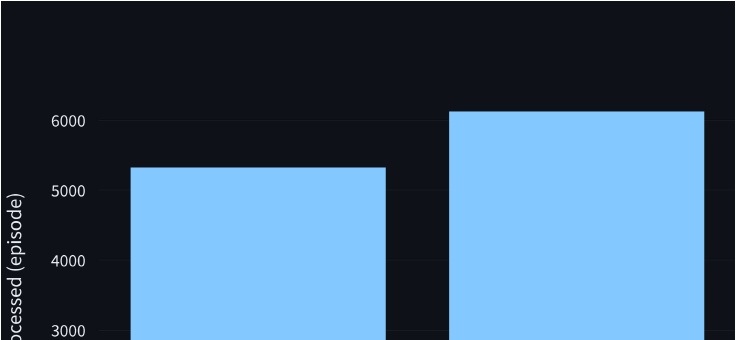


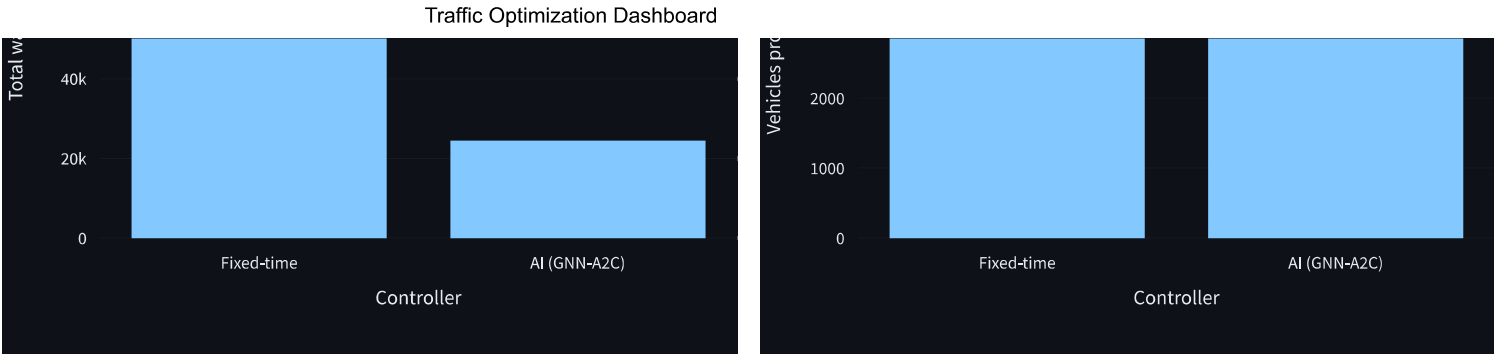
Fixed vs AI – Episode-level Comparison

Total waiting time (lower is better)

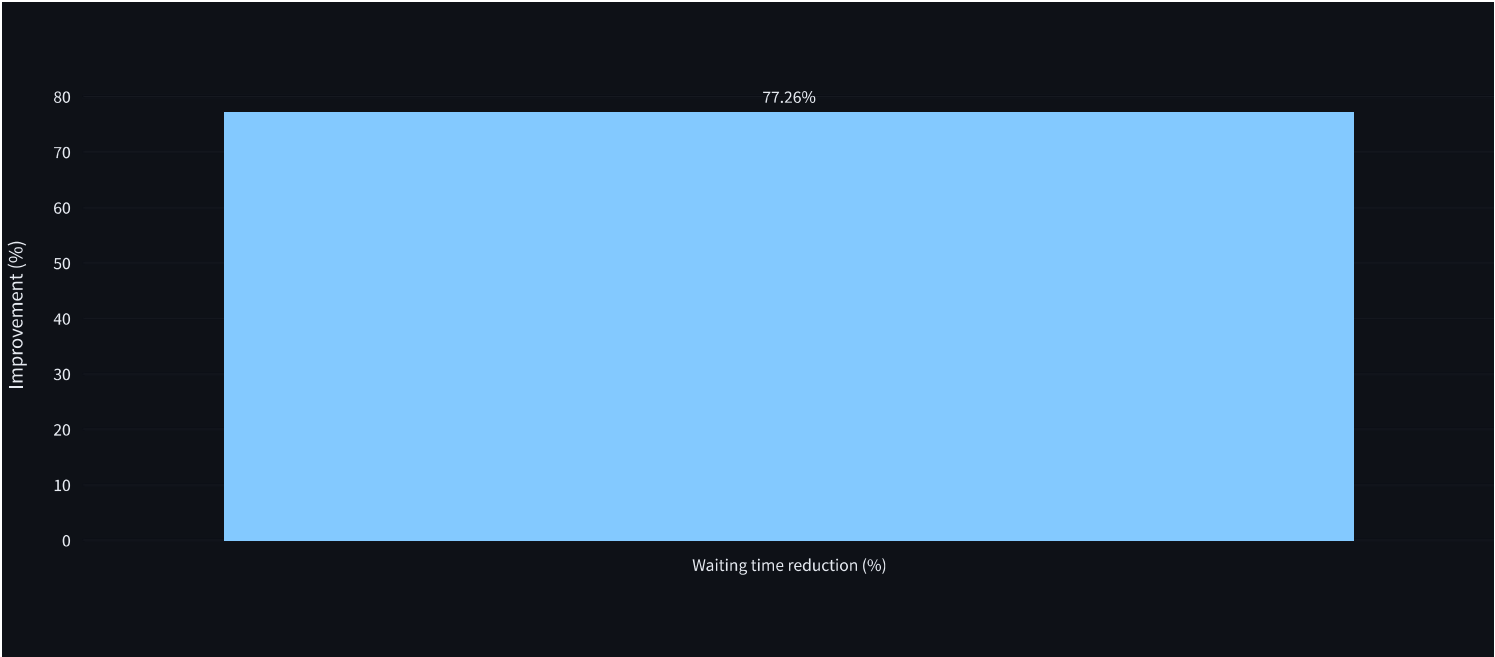


Total vehicles processed (higher is better)





Overall Improvement of AI over Fixed-time



Estimated waiting time reduction of AI vs Fixed-time: 77.26%

Download Metrics as CSV

Global metrics (all controllers)

Download global metrics CSV

TLS-level metrics (all controllers)

Download per-TLS metrics CSV

