Agent with wider observation

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Experiment Setting

- The setting of **basic state** for agent: (local view)
  - neighbor links' throughput
  - observable end-to-end throughput with different destination

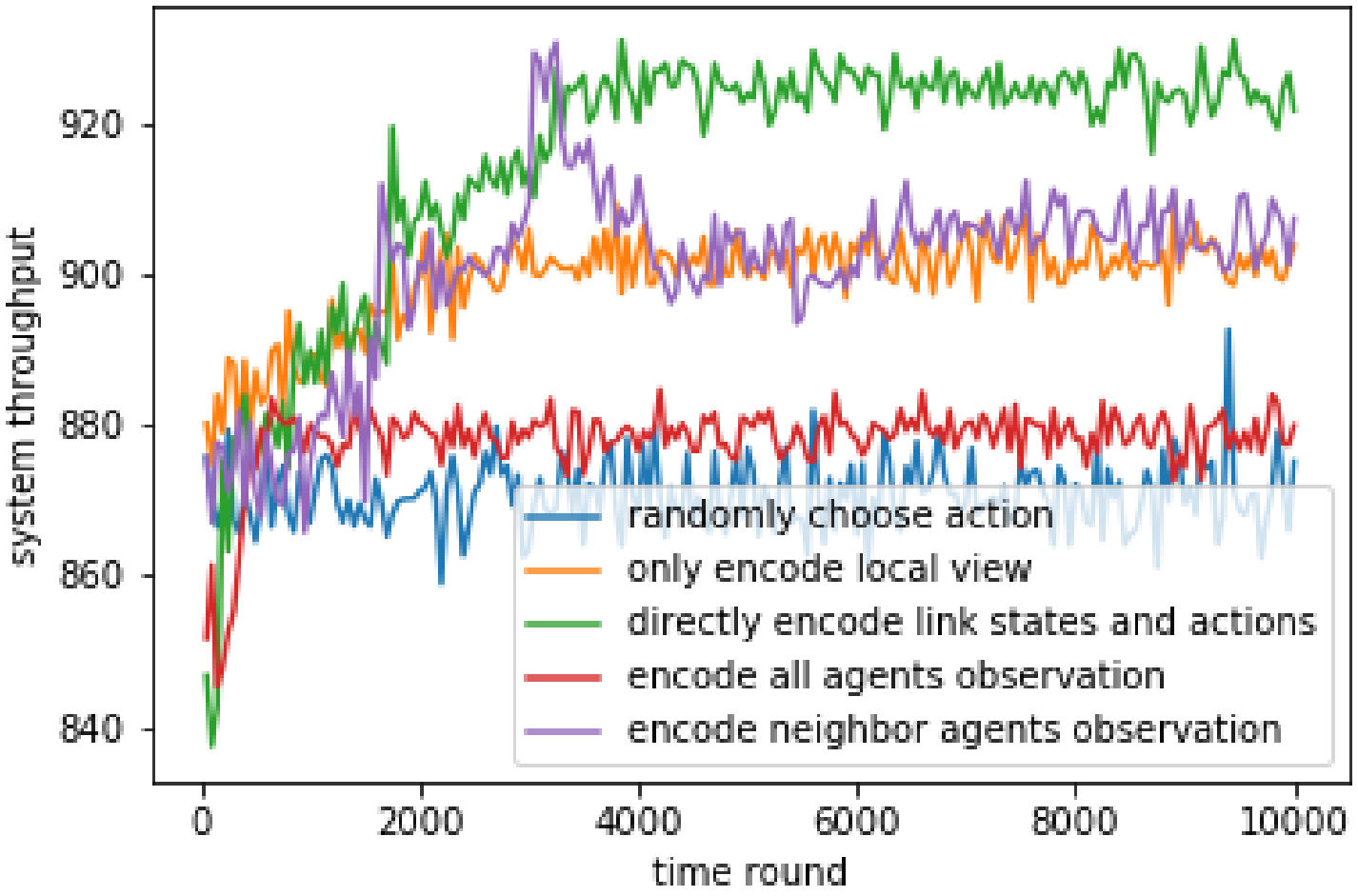
- In order to satisfy Markov Property and enable agents to have wider view of network system. Try to enlarge agent' state:
  1. Encode **all other** agents' **observation**(basic states and actions) as the input.

  2. Encode **neighbor** agents' **observation**(basic states and actions) as the input

  3. Directly encode **all link** states and actions as the input.

  Compare to:
  1. Randomly choose actions.

  2. Only **Basic state** as the input of RL model.



- Encoding other agents' states and actions (**red** and **purple**) seems to have no improvement on the performance compared to original RL model (**orange**). And easier to trap into local optimal (like **red** line).

  Maybe it's because information from other agents is redundant and useless.

- Directly feeding link states and actions (**green**) can help agent to have a clear global view, thus showing a slight improvement.