MyAgent: An agent submitted to the ANAC 2025 ANL league

Yuma Fukutoku, affiliations and emails

June 11, 2025

1 Introduction

This agent uses same LSTM system. It use four data, flag which indicates propose or respond, the current offer ufun, the relative time of the negotiation, and flag which indicates center or edge agent. To use some flags, the LSTM system has embedding layer to identify the differences of flag. The LSTM system output a ufun, agent use it for deciding proposing outcome and response. Agent broaden the ufun by small variable, alpha, and specify the outcome or response by the scope of the ufun. The agent also uses InverseUFun to specify the outcome by a ufun. The agent uses compromise system, if time is taken too much, agent finish negotiation with a little ufun.

2 The Design of MyAgent

2.1 Coordination Strategy Centeragent

This agent cannot prepare the Strategy of center agent. But there are a flag which indicates center or edge agent in the input of LSTM system.

2.2 Bidding Strategy

Bidding Strategy use LSTM system. It has four input and one output.The kind of input is flag which indicates propose or respond, the current offer ufun, the relative time of the negotiation, and flag which indicates center or edge agent. The output is a ufun which is median of range which specify the outcome of Bidding Strategy. The diagram of LSTM system is Figure 1. BoA is Bidding Strategy or Acceptance Strategy, CoE is Center agent or Edge agent

2.3 Acceptance Strategy

Acceptance Strategy also use LSTM system. It use output for deciding Accept or not. If the ufun is higher than min of range, it will accept.if not, it will reject.

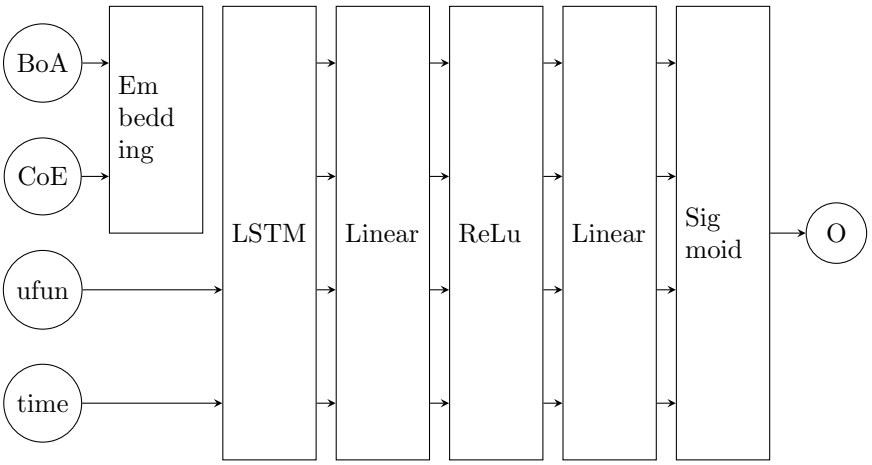

Figure 1: the diagram of LSTM

It has another Strategy, compromise;if negotiation takes too much time, Agent will accept even if the ufun is smaller than output.

3 Evaluation

The agent is good in my tournament; the agent get first place sometime in the tournament. But I try only my tournament, so I do not know the agent get high score in the tournament.

4 Lessons and Suggestions

To use LSTM system, the number of input is necessary for good learning. I want to make firmer system next ANAC.

Conclusions

I make the agent using LSTM system, but it is not far from perfect. I want to use this experience for next ANAC.