

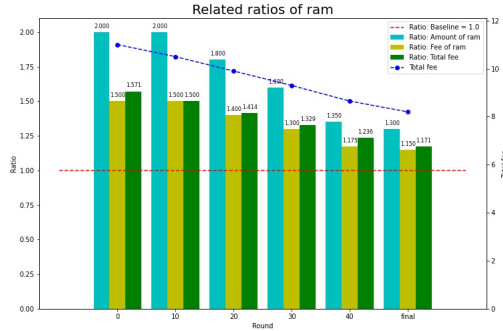
APPENDIX

A. Tables

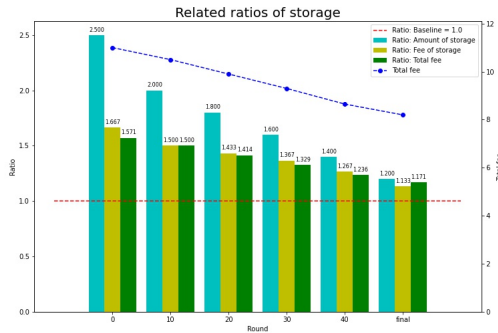
TABLE XVI: The 30-rule set

| Rule index | Fuzzy input | | | | Fuzzy output |
|------------|-------------|-----------|-----------|--------|--------------|
| | VUPR | RUPR | SUPR | TPR | Tendency |
| 1 | \ | \ | \ | high | low |
| 2 | \ | \ | \ | medium | medium |
| 3 | \ | \ | \ | low | high |
| 4 | cheap | cheap | cheap | \ | high |
| 5 | cheap | cheap | medium | \ | medium |
| 6 | cheap | cheap | expensive | \ | medium |
| 7 | cheap | medium | cheap | \ | medium |
| 8 | cheap | medium | medium | \ | low |
| 9 | cheap | medium | expensive | \ | medium |
| 10 | cheap | expensive | cheap | \ | high |
| 11 | cheap | expensive | medium | \ | high |
| 12 | cheap | expensive | expensive | \ | medium |
| 13 | medium | cheap | cheap | \ | medium |
| 14 | medium | cheap | medium | \ | medium |
| 15 | medium | cheap | expensive | \ | low |
| 16 | medium | medium | cheap | \ | medium |
| 17 | medium | medium | medium | \ | high |
| 18 | medium | medium | expensive | \ | high |
| 19 | medium | expensive | cheap | \ | medium |
| 20 | medium | expensive | medium | \ | medium |
| 21 | medium | expensive | expensive | \ | medium |
| 22 | expensive | cheap | cheap | \ | low |
| 23 | expensive | cheap | medium | \ | medium |
| 24 | expensive | cheap | expensive | \ | high |
| 25 | expensive | medium | cheap | \ | high |
| 26 | expensive | medium | medium | \ | medium |
| 27 | expensive | medium | expensive | \ | medium |
| 28 | expensive | expensive | cheap | \ | medium |
| 29 | expensive | expensive | medium | \ | medium |
| 30 | expensive | expensive | expensive | \ | medium |

B. Figures

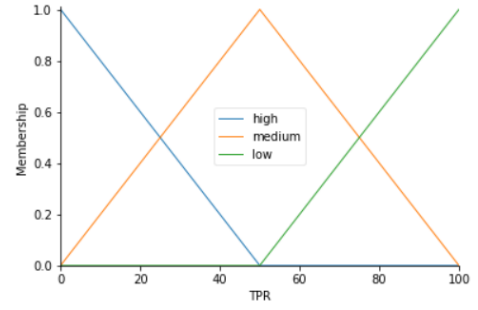


(a) Comparison of the ratios (RAM)

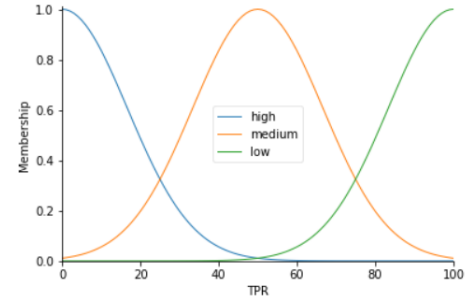


(b) Comparison of the ratios (Storage)

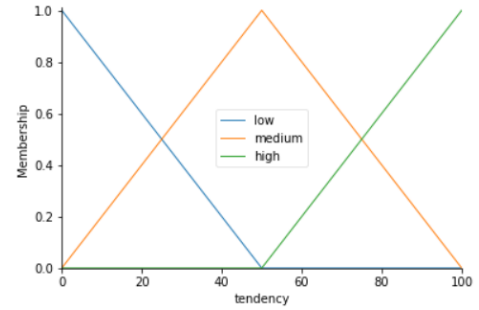
Fig. 6: Comparison of the ratios in different rounds of a negotiation process



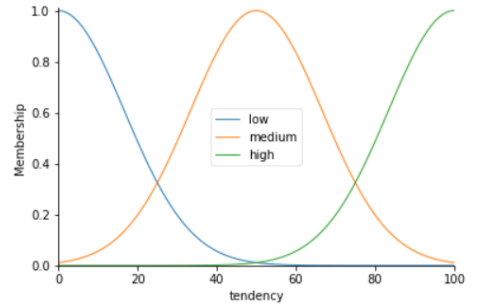
(a) Triangular membership function of TPR



(b) Gaussian membership function of TPR

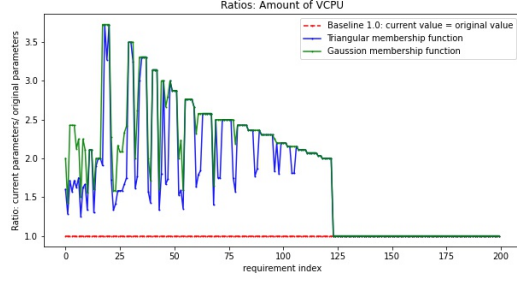


(c) Triangular membership function of tendency

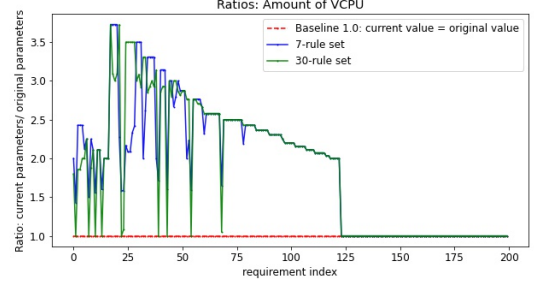


(d) Gaussian membership function of tendency

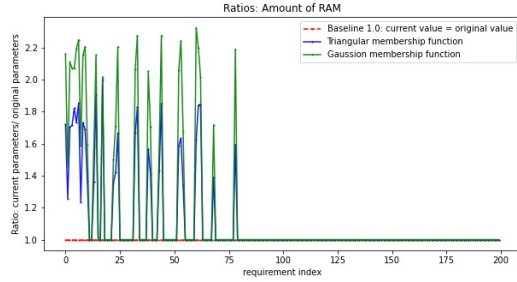
Fig. 7: Membership functions of total price ratio (TPR) and tendency. Horizontal axis scaled from $[0, 1]$ to $[0, 100]$ for better visualization.



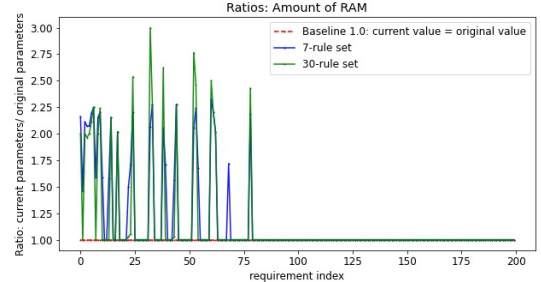
(a) The ratio of the amount of VCPU



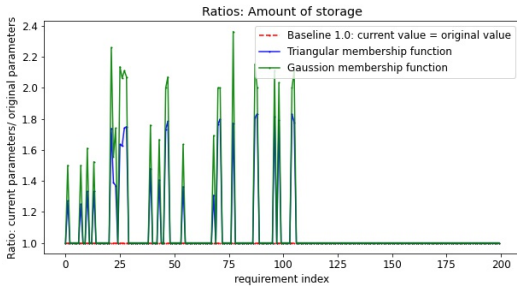
(a) The ratio of the amount of VCPU



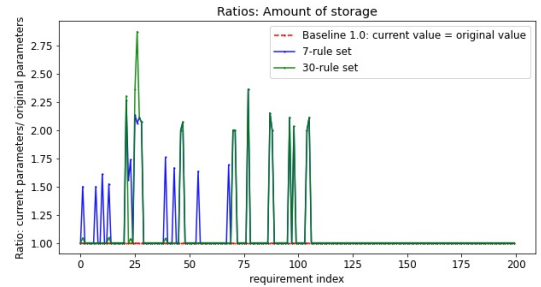
(b) The ratio of the amount of RAM



(b) The ratio of the amount of RAM



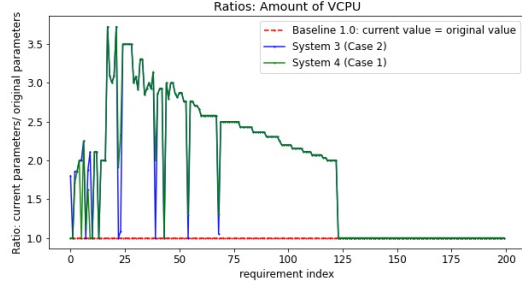
(c) The ratio of the amount of storage



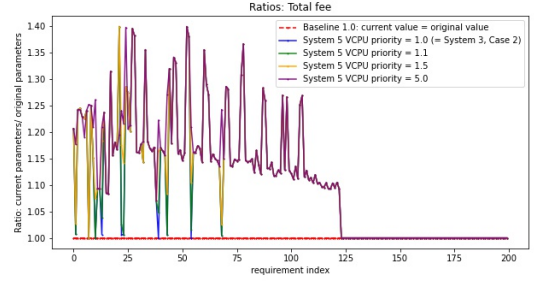
(c) The ratio of the amount of storage

Fig. 8: Plots of ratios in negotiation experiments (different membership functions)

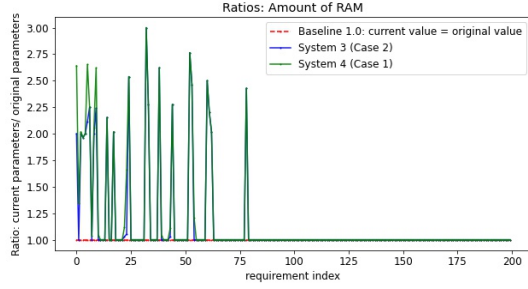
Fig. 9: Plots of ratios in negotiation experiments (different rule sets)



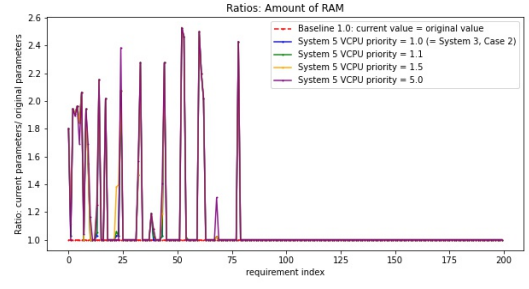
(a) The ratio of the amount of VCPU



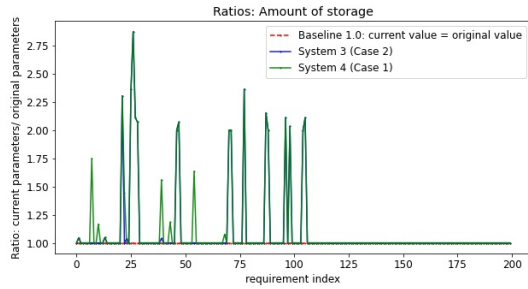
(a) The ratio of the total fee



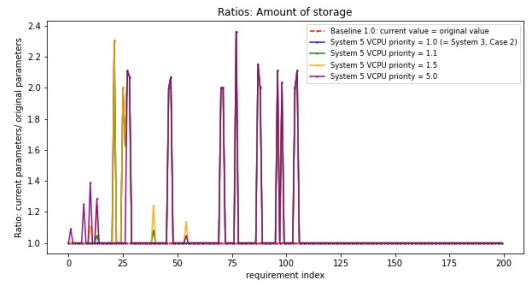
(b) The ratio of the amount of RAM



(b) The ratio of the amount of RAM



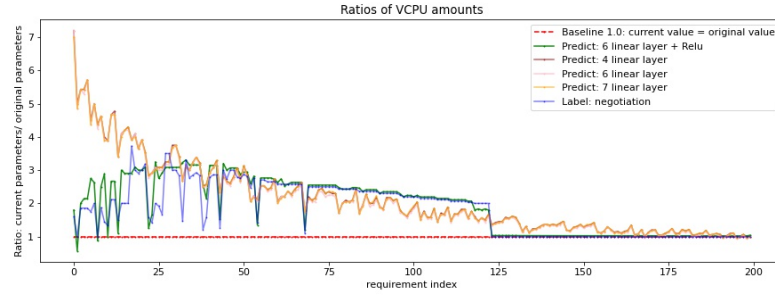
(c) The ratio of the amount of storage



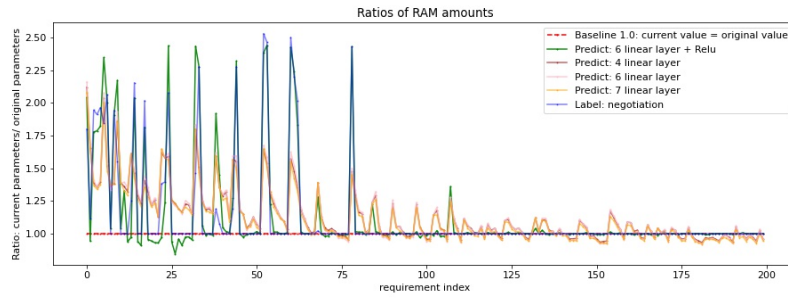
(c) The ratio of the amount of storage

Fig. 10: Plots of ratios in negotiation experiments (different cases)

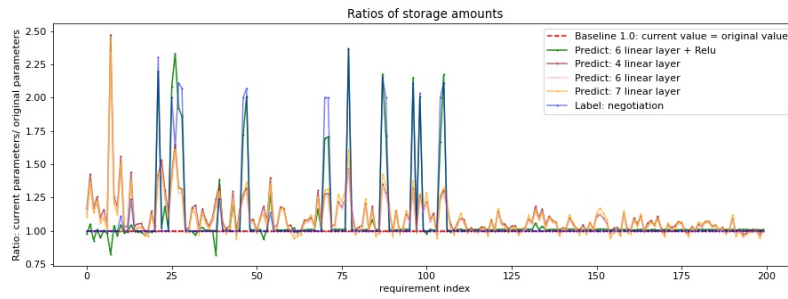
Fig. 11: Plots of ratios in negotiation experiments (different priorities)



(a) Comparison of ratios (VCPU)



(b) Comparison of ratios (RAM)



(c) Comparison of ratios (Storage)

Fig. 12: Comparison of ratios of predictions to the ratios of labels