TheNegotiator

TheNegotiator uses two modes: DISCOUNT and NO_DISCOUNT. In turn, each of the modes contains three identical phases as shown below. A negotiation starts in the NO_DISCOUNT mode. A mode switch occurs after discount time and cancels the NL_DISCOUNT mode, which corresponds to a change of an hardheaded strategy to a more concession oriented approach.

The main difference between the strategies is in the speed of descent of the minimum threshold for acceptance and offering. In the NO_DISCOUNT mode most time is spend on the higher range of utilities and only in the last seconds the remaining bids are visited. The DISCOUNT mode treats all bids equally and tries to visit them all. An opponent move is accepted if it is above the current minimum threshold. An offer should also satisfy the minimum threshold, however a dynamic upperbound is used to limit the available bids to offer in a turn. In 30% of the cases this upperbound is ignored to revisit old bids, which can result in acceptance in later phases of the negotiation.

In effect, the NO_DISCOUNT mode uses a hardheaded strategy, whereas the DISCOUNT mode tries to visit all remaining bids, and is therefore more concession oriented. A remaining moves estimator is used to make sure that TheNegotiator always accepts before the negotiation is closed.

Phase	Accept	Offer
1	Accepts when the utility of the opponent bid is above the minimum threshold	Plays a bid which is between the lower- and upperbound of the current time. Ignores upperbound in 30% of the cases
2	Same as phase 1	Plays previous bids of opponent bids that satisfy the lowerbound. If none exist, same strategy as phase 1
3	Same as phase 1 if there are more than 15 turns left. If there are less than 15 turns left, every offer is accepted	Same as phase 2