

Nowadays, more and more companies are willing to use pricing strategies to maximise their revenues. But the vast majority of today's offers are not taking into account customers' buying behaviour.

Using a Deep Q Network (DQN), our team addresses, in this project, a potential way to face this problem. Two types of customers are defined : one naive, one strategic. The key difference here is their behaviour. The strategic customer is ruled by price and timing, he has a deterministic behaviour as opposed to the naive customer, who is less analytical when buying.

An analysis of historical prices and their variations is carried out before deciding on the actual purchase, which makes the strategy of these customers closer to what we could do before a purchase.

Our DQN shows encouraging results especially when the market is mainly composed of strategic customers. To reach them, we had to train it on specific proportions of strategic customer shares as a user would do when estimating their proportions.

We can conclude by saying that the analysis of customer behaviour is promising because the demand for accurate pricing solutions is increasing. In addition, an increased accuracy would allow companies to achieve better results. The next possible step would be to include more elements and to optimise the learning parameters, making it easier to reach an optimal accuracy.