

As the clubs market maker, my strategy for this game was essentially me trying to act “perfectly rationally” as much as I could, in the hopes that I would be rewarded in the end. I wrote a Python script that would tell me the fair price of each contract at each round, given my private information and the public information on the revealed cards. I was to buy any contract whose ask was lower than my fair price, and short the contracts whose bid was higher than my fair price. The implementation of this strategy was, however, severely limited by what to me seemed like irrational behaviour by other market makers.

Firstly, given that significant spreads existed I had to tolerate paying 5-10% more for each contract, otherwise it would be impossible for me to trade at all. I aimed to keep my own clubs contract's midprice at the fair price with a spread of 1 or 2 cents to encourage a lot of volume, and end up making a lot of pennies. Though I ended up generating 485 transactions for clubs, 104 of which were a debacle (see below), so I can't say this worked very well.

My strategy ran into a few difficulties because of, what to me seemed like very high spreads. Say the fair price of spades is 0.3 according to me. The market maker sets their bid and ask at 0.25, 0.35. Now I can't transact in spades at all. Later in the game I end up being very overweight the other contracts. My risky position then prompted me to overpay for spades later in the game, because I wasn't comfortable holding an oversize share of hearts and diamonds. Throughout the game it seemed to me that spades was always overpriced, and this really bugged me. But I couldn't do anything about it, because the high spread made it insensible to both short or buy it.

I also ended up with a high amount of shorts on my club contracts. In a desperate bid to cover my shorts, I ended up intentionally overpaying for club contracts near the end of the game, contrary to my fair price estimates.

I also made use of arbitrage opportunities when the fair price of two contracts appeared to be the same, but one had a higher bid than the other's ask. I mostly did this with hearts and diamonds. But whenever I bought or sold a few contracts in succession the market makers would change their price because they assumed I knew something they didn't. This severely limited my arbitrage opportunities.

I tried to choose which cards to reveal based on which contract I was underweight in, and therefore wanted to decrease the price.

I made a great market making debacle at round 32, where, upon the clubs contracts being made worthless, I failed to update my bid price to zero (first didn't notice, then forgot to click “set”, then couldn't click set as I forgot about the max spread and my ask). I lost 27.76\$ with 104 sell orders from the other players, which really went to show me how crucial it is that market makers don't mess up.

I also had a python script that I used to tell me how many X cards the X contract market maker had in their hands, given that they acted rationally. Though this didn't help me that much because knowing whether the hearts person had 1 or 2 hearts, and not knowing the rest of their hands, didn't really provide any useful information to me. I just tried to incorporate this information right before the big

card reveal rounds, but honestly it was useless. Perhaps if I observed people's purchase patterns very carefully in just one round, and used the prices they paid to predict their private information, and then incorporated that information in my fair price assessments, that could have proved more useful. But that still assumes perfect rationality and negligible spreads.

Overall, for the first 20-25 rounds I kept up my rational act, and then in the face of great uncertainty and the imbalance in my contract positions, I acted more and more irrationally.