Milestone 6

15-400, Spring 2018

David Zeng

Major Changes

No major changes.

What You Have Accomplished So Far

- For n players, if we use a different model for envy (assuming items have value between 0 and 1 for each agent), we can show that there exists an algorithm that uses n^2 disruptions per step and achieves an absolute envy value of at most $O(n\sqrt{\log n})$. However, this isn't really that interesting since we are just adapting another result and using it without too much additional work.

Meeting Your Milestone

I believe I've met my milestone by continuing to work on this problem.

Surprises

None.

Looking Ahead

So my intuition is that the above result is far from optimal. If I had to guess, I'd say optimal would be n disruptions per step and EF1 or something like that. So hopefully, we can improve from the above result. Lately, I've just been reading up on other papers solving related problems and seeing if anything can be adapted from there.

Milestone Revisions

I think a good milestone to hit by the end of this project would be to find any non-trivial allocation algorithm for the n agent case.

Resources Needed

No resources needed.