

Assignment 3

Please refer the papers reading3-1, reading3-2, and reading3-3 to solve following problems.

- 1 (2 points)** Please explain why the proof of Theorem 2 in paper 'reading2-2' is incorrect?
- 2 (2 points)** In paper 'reading2-2', the theoretical analysis is incorrect, why experimental results are still good, i.e., outperform previously known algorithms? Give your review on theoretical analysis and computer experiments.
- 3 (2 points)** Why the Profit function in paper 'reading3-1' is not monotone? Please carefully check the proof of Theorem in (Nemhauser et al., 1978) for monotone submodular maximization with size-constraint, why the monotone property is required?
- 4 (2 points)** In paper 'reading3-3', for First Mover Strategy, only two players are considered. Can you extend the work to more than two players? If you cannot, please explain what trouble you meet.
- 5 (2 points)** Describe the role of approximation algorithms in the analysis of the noncooperative game.