COMPSCI/ECON 206

Computational Microeconomics

2023 Spring Term (Seven Week - Second)

昆山杜克大学
DUKE KUNSHAN
UNIVERSITY

Problem Set 2: Decipher Game Theory

Complete your Problem Set 2 in a GitHub repository that you create in the GitHub organization (https://github.com/Rising-Stars-by-Sunshine) by forking the template:

https://github.com/Rising-Stars-by-Sunshine/csecon206-profile.

- o (40%) Please save your completed overleaf as zip file on the GitHub under the code folder.

  - o Refer to the detailed requirements: https://www.overleaf.com/read/skpmkhgvgfsk

  - o Complete the assignment on the shared overleaf project.

- o (40%) Please upload your completed Google Colab on the GitHub under the code folder.

  - o Find one normal/strategic form matrix game in game theory literature. (10%)

    - ▪ Describe the Game in text cells.

    - ▪ Solve the Nash equilibrium in code cells.

    - ▪ Elaborate on the Nash equilibrium solution in text cells.

  - o Find one extensive form game in game theory literature. (20%)

    - ▪ Insert the game tree generated by game theory explorer in text cells.

    - ▪ Describe the game in text cells.

    - ▪ Insert the extreme equilibrium of the strategic form in the text cells.

    - ▪ Elaborate on the solutions in the text cells.

    - ▪ If your game is an extensive form game of perfect information, please also insert the solution of SPNE in the text cells and briefly describe the solutions.

- (10%) Please briefly describe your project information, structure, and spotlight in the Readme file of the GitHub.

References:

- Markdown instructions: https://github.com/Rising-Stars-by-Sunshine/csecon206-profile/blob/main/Instructions%20for%20writing%20markdown.pdf

- Grading requirements: https://github.com/Rising-Stars-by-Sunshine/csecon206-profile/blob/main/CSEcon206_%20Requirements_Grading%20Rubric_Spring2023.pdf

- Goeree, Jacob K., and Charles A. Holt. "Ten little treasures of game theory and ten intuitive contradictions." *American Economic Review* 91, no. 5 (2001): 1402-1422.

- Zhang, L. (Sunshine), Tian, X. (Michelle), Wu, T. (Henry), Li, J., Wang, C. (Claire), Zhuang, Z., … Zhuang, Z. (2022). Python Packages for Economics: Model and Simulation. In Autumn 2021. https://doi.org/10.21428/aa21bfc0.841ff112
    - [Sample Questions]
    - [Sample Answers]