



Final Project: Pioneer Research at the Frontier of Microeconomics

Complete your Final Project in a GitHub repository that you create in the GitHub organization (<https://github.com/Rising-Stars-by-Sunshine>)

- Overleaf Template: <https://www.overleaf.com/read/mmwgckrdqbwg#587397>
- GitHub Template:

https://github.com/Rising-Stars-by-Sunshine/CSECON206_Spring2024/tree/main

The First Principle: *A guiding principle for completing your final project is to prioritize clarity and accessibility: "Put yourself in the other's shoes." This means considering how someone with no prior background in your specific project area could engage with your work. When preparing your presentation or report, aim for simplicity and thoroughness, ensuring that your explanations are clear, your methodology is detailed, and your findings are contextualized. By doing so, you enable a general audience from any discipline not only to understand and appreciate your study but also to replicate it if desired. This approach not only broadens the impact of your work but also enhances its credibility and educational value.*

1. GitHub Structure

– Readme.md (A Polished Version of the PS1 together with New Requirements)

– Proposal (New)

–Latex

–Colab

–Readme.md

– CSEcon (A polished version of the PS1)

- Readme. md
- Advance_CSEcon (A polished version of PS1)
- Readme. md

2. Detailed Instructions

Part I: Professional Profile

In the [Root Directory Readme.md](#), provide the information following the GitHub template provided. For the final reflection, Answer the following questions:

- **Intellectual growth:** How do you grow intellectually in this course to understand the merits of applying machine learning to solve social and economic issues? What do you think is the magic of interdisciplinary research?
- **Professional growth:** How do you grow professionally in this course to acquire a combination of skills and create professional profiles?
- **Living a purposeful life:** What do you want to be the founding father/mother of? Imagine winning the Nobel Prize or Turing Award one day: what's your feature sentence? What contribution do you want to make to your self-fulfillment and to advancing human civilization in a multi-objective perspective?

Part II: Proposal

In the Readme.md under the proposal folder, embed the contents below:

- Your research poster.
- URL to your shared view overleaf
- Under the Latex folder, provide the downloaded zip file of your overleaf.
- Under the Colab folder, provide the Google Colab using game theory analytical tools to solve for at least the benchmark of your games.
- The following research description in sections and bullet points in the format of Q&A, envisioning that you are being interviewed at the awarding ceremony of Nobel Prize or Turing Awards for your research. Please apply the rules of formal academic writing.
 - [Summarize the Background/Motivation]
 - What are the gaps between the existing literature and the pressing social and economic issues in the digital economy of complex system involving both human and AI agent that inspires your research?
 - [Research Questions]
 - What are the questions that your research intends to answer?
 - Why are the questions important?
 - Why are the questions not answered by existing game theory literature?
 - [Application Scenario]

- In which real-world situation does your newly proposed game and/or solution concept or mechanism apply?
- What is the literature in other discipline such as psychology that could provide a behavioral foundation of your newly proposed game and/or solution concept, or mechanism?
- [Methodology]
 - What is the key game theoretical or mechanism design framework that you build upon?
 - What is the key computational or analytical tools that you apply to answer your request question?
 - What is the advanced technology or interdisciplinary insights that you integrate into the existing methods that smartly solve your research question?
- [Preliminary Results]
 - Can you provide a concrete illustration example of game theory or mechanism design that your approach significantly improves at least one objective of human welfare compared to existing research without your approach?
- [Intellectual Merits and Practical impacts of your project.]
 - Can you demonstrate the limitation of your current research that would inspire future research? For example, what are the other important objectives of human welfare that you approach does not consider yet?
 - Can you elaborate on how your research can be applied to improve individual, company, and government decisions in strategic scenarios or social choice issues?

Part III: CS_Econ and Advance_CSECON

Provide the polished version of your PS1 GitHub content.

The Check List:

- All contents are written in professional markdown languages.
- The contents passed the Turnitin duplication check.
- Your Academic writing satisfies the requirement and rubrics.
- Your submission contains at least one graphical illustration, such as a flowchart or mind map, created using graphing software for each question that provide the best reader experience matching the content of your texts.
- You submitted your GitHub URL ready to be reviewed for grading together with Turnitin reports and Grammarly screenshot by the deadline.

More Resources:

- Digital platform for poster design:
 - <https://www.canva.com/>
- Graphing Software:
 - <https://miro.com/>
 - <https://whimsical.com/a>
 - <https://www.lucidchart.com/>
 - <https://app.diagrams.net/>
 - <https://mermaid.live/>
 - <https://markmap.js.org/>
 - https://www.overleaf.com/learn/latex/TikZ_package