

April 29, 2018

## **Abstract**

## **1 Introduction**

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## **2 Previous Work**

[2] [3] [4]

## **3 This work**

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### **3.1 Behaviours**

What general behaviors arise in this system? How does the wealth of the agents change over time? At the aggregate level? At the individual level?

### **3.2 Diversity**

How does the diversity of strategies influence the dynamics of the system?

### **3.3 Behaviours**

Are there generally classes of agent behavior (say, based on what data they use, how they process it, or the agent's overall sophistication) that lead to better performance?

### **3.4 Violate Assumptions**

What happens to the system if you violate one of the original assumptions of the problem and allow the agents to alter their strategies over time by observing the performance and strategic details of the other agents?

### 3.5 Mete-Agents

Suppose that meta-agents exist that can coordinate the behaviors of a subset of the agents (and split the resulting payoffs equally across the subset)—how does this impact the system’s behavior?

### 3.6 Changes

How do the answers to the above questions change as:

- tau is altered?
- you change the total number of agents in the world?

## 4 future

## 5 References

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- [3] Bikas K. Chakrabarti. Kolkata restaurant problem as a generalised el farol bar problem. in *Econophysics of Markets and Business Networks*, pages 239–246, Eds. A. Chatterjee and B. K. Chakrabarti, *New Economic Windows Series*, Springer, Milan (2007), 84(2):239–246, 2007.
- [4] Arnab Chatterjee and Manipushpak Mitra Anindya-Sundar Chakrabarti, Bikas K. Chakrabarti. The kolkata paise restaurant problem and resource utilization. *New Journal of Physics*, 12(7):075033, 2010.
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