CSC 450**, Senior Research**

**Journal Article Discussion**

***Cellular automaton model for evacuation process with obstacles***

**Directions**: Select one person from your group to write up the answers to questions 1 – 3. Your group will be assigned a “mini-presentation” from #4, for which you will present your answer to the class.

**Group Members:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. What is the research problem the paper addresses? What is the significance of the problem (why is it important)?
2. The authors describe a lot of related work. What is the relationship between the current model and the work referred to in [21] which is mentioned in the first full paragraph on page 632?
3. ***Mini-presentations***.
	1. Mini-presentation: Use **Figures 1-2** to describe the cellular automata model.
	2. Mini-presentation: Describe **Figure 6**, including the relationship between evacuation time (*T*), the exit door width (*a*), and the number of occupants (*N*).
	3. Mini-presentation: Describe **Figure 9**, including how well the relationship between T, *a*, and *N* can be approximated by the scaling factor, $T \~ \frac{2N}{a}$, defined in Equation (1).
	4. Mini-presentation: Describe **Figure 11** and **Figure 12**. Where are the best exit door positions?
	5. Mini-presentation: Describe **Figure 14** and refer to **Figure 11** to support the author’s claim that “For a double door, the longest evacuation time turns out to occur for a very traditional location of the door.”
4. How might this work be followed up on? What relevant questions could be investigated by modifying the cellular automata model used here?