MSIIS Assessment Details 2015

http://davidhales.com/msiis, David Hales (dave@davidhales.com), 13/9/15

All students – paper presentation

All students (MSc and PhD) need to select a scientific paper relevant to the course topics, read it, and make a short (10-15 mins) presentation to the group plus answer questions from the group (5 mins).

The last two lectures have been reserved for these presentations: 23/11/15 and 30/11/15. You need to select a paper and a lecture date and e-mail those to me as soon as you can. I will then verify that the paper is within scope and schedule a slot in the lecture for your talk.

You may select a paper from those listed on the MSIIS webpage or select another paper you think is interesting. Each student should present a different paper. Papers and lecture slots will be allocated on a first-come-first-served basis.

It is up to you how you present the ideas from your selected paper. However, I would recommend the following: Produce a maximum of 5 slides (if you are producing slides). Address the following issues: 1) what is the problem / question the paper tries to address; 2) how does it address the problem; 3) what results or insights were presented; 4) what do you think was good and bad about the paper.

Deadlines: Paper and preferred lecture date e-mailed to me no later than 2/11/15.

PhD students – programming assignment

In addition to the presentation, PhD students should complete a simple programming assignment relevant to the course topics. This will involve selecting a topic, doing the work and writing a one page outline of what you did and what results you got including a link to any code produced. You can use any programming language you wish. You do not need to write an entire program from scratch it is acceptable to alter, modify or use existing code.

When you have chosen a topic e-mail me to let me know. You can select any topic that is within the scope of the course. However, here are some possible topics:

- Implement the “game of life” Cellular Automata. Change the rules of the game slightly what kind of dynamics emerge from the altered game?
- Implement the 1D Wolfram Cellular Automata. Can you think of a way to automatically explore the 256 rules and check each for some property? For example, does the pattern disappear completely by cycle 100?
- Either implement or take an existing implementation of Schelling’s Segregation model. Do a parameter sweep over something other than (or in addition to) the threshold value. For example, what happens when you vary the number of agents on the grid?
- Take a relevant model in the NetLogo models library. Modify it in some way and see how this changes the behaviour. What have you learned?
- Take a relevant model in the NetLogo models library. Use the automated parameter scanning tool “BehaviourSpace” to sweep some parameter(s). Take the results and plot them on a graph. What have you learned?

Deadlines: proposed topic e-mailed to me no later than 30/11/15. Results (two page outline plus link to any code) e-mailed to me no later than 12/1/15.

NOTE: If you have any questions about the assessed tasks or wish to discuss topics in general then please e-mail me (dave@davidhales.com).