Coursework 3: Conflicting Goals and Social Behaviour in Games

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1 Introduction

All of your courseworks are designed primarily to give you experience in developing intelligent control and/or cognitive systems. This course also gives you experience and feedback in writing about research. However, this year we are attempting to make the second and third coursework lighter-touch. Therefore, the writeup for this submission should be about one page, without figures etc., and does not need to have all the normal sections of an academic paper.

2 Approach

You will learn to build character Game AI for UT2004. The software for this is installed only in two places: the lab on Level 3 1W and the MSc Lab. You are expected to use the computers there. *If you want to use your own computer, you are solely responsible for trying to get that working — you will not get help from any of the teaching staff. And you still need to demo your code on the lab machines.* You will be shown in lab and lecture how to build agents in UT2004 using BEHAVIOR ORIENTED DESIGN (BOD), optionally utilising the ADVANCED BOD EDITOR (ABODE). Technical details are available in a Tech Brief, provided by the tutors on Moodle.

70% of your coursework will be marked similarly to the other courseworks, based on a report concerning the benefits and costs of creating a team for capture the flag. You should think both about how the individual agents manage their conflicting goals, and how the team cooperates. The remaining 30% of the mark will be allocated in a mandatory competition. For **CM30229 the mandatory lab is Tuesday 22 April**; for **CM50230 it is Wednesday 23 April**. 20% will be given simply for turning up with working code that is somehow substantially different than what is distributed via Moodle, *and* having your team successfully compete in a round-robin event. An additional 5% will be allocated to anyone who wins at least half their matches in the round-robin stage. A further 5% will be allocated to the overall highest-ranking winner for each of the two units as determined via a direct elimination tournament on **Tuesday, 2 May**. Attending this second lab is not mandatory, but is fun.

In the mandatory lab you will also show the tutors how to run your code, and show them how your code is different from the distributed code. *If you cannot run your code and show how you modified it, you will not get the "free" 20% of the mark.* If you cannot attend lab, you can either have another student do the demo for you, or attend the other lab. *Notify the lecturer and TAs first if you are going to do this.*

We will set the deadline for code submission by negotiation in the lecture on 3 April and/or Moodle poll, but it will be no earlier than **Friday 7 April** and no later than 23 April. It may be different for the two different units (CM50230 and CM30229.)

3 Results

The results of the tournament are not really the results of your coursework, since it is only one tournament so the significance of the outcomes is not clear. Instead, 70% of your mark will derive from (up to) 10 observations on approximately one side of paper, Times 12 point font. If you go over by a line or two, don't spend a lot of time fiddling with margins. But going substantially over a page will be penalised in proportion to the extra length, e.g. two pages is the same as zero pages. Do not feel obliged to recount exactly how your bot did in the competition—this information will come from the tutors.

An observation should be a point about what worked or what didn't work with respect to your task. They can be about human-like cognitive systems more generally, or cooperation more specifically. They can be informed critiques of the software tools. An observation can be of more than one sentence, so you might want to start with one sentence as a hypothesis, and then add one or two sentences describing evidence that lead you to believe it, or an experiment about how you would test it. In general, while your own bots may serve as inspiration, you will get more points if you draw conclusions that might be applicable more generally, or that you can relate to themes from the course.

The observations will be marked on a three-point scale:

0 Missing or redundant.

1 Conspicuously inaccurate or not entirely coherent, but not entirely wrong.

2 A good solid observation.

3 An exceptionally insightful point.

Your overall mark will be multiplied by $\frac{7}{3}$ and added to the outcome of the competition as described above. This coursework as a whole is worth 15% of your mark.

4 Discussion and Conclusions

We know that you are finishing your dissertations in the last month of your degree, so we do not expect you to spend much time on either the code or the writeup. Hopefully you will find this coursework fun. But given that it is 15% of your mark, it is probably worth about ten hours of your time on the game, and a few hours in the competition and writing the bullet lists.